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ABSTRACT

A study was conducted to determine the effect of the college attended on the occupational attainments of students. Data were obtained from the National Opinion Research Center on the occupational and educational activities of the college class of 1961 and analyzed by path regression techniques. (Analyses were limited to the activities of male graduates who entered professional and business-managerial occupations; female graduates' activities were not analyzed, although some data are provided.) Results of the study included (1) that college origins influence careers among professional occupations, not among business-professional ones; college origins provided differential first-job status, and they also appeared to be associated with subsequent mobility; and (2) college origins influenced the occupational achievement of low status individuals more than of high status college graduates; grade point average was more important to the attainments of high status graduates than it was among low status ones. Implications of the research are that the social stratification system is made up of chains of opportunity, and that it is important to be able at the the right place at the right time (right college). The findings suggest that policies have to be tailored to the specific occupational segment in question; that society needs to provide incentives in the occupational market as much as in the educational market; and that more attention should be paid to the question of who goes to what college. (KC)

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FINAL REPORT

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EDUCATION AND WORK: DIFFERENTIAL PATTERNS OF OCCUPATIONAL STATUS ATTAINMENT THROUGH SCHOOLING

by

Vincent Tinto

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

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PREFACE AND ACKNOWLEDGEMENT

The seeds of the following study were planted nearly eight years ago during a brief conversation over coffee with several persons among whom was a labor market economist from Columbia University. It was during that conversation that I was first introduced to the notion of segmented labor markets. Namely, that it was possible to envision the labor market as being made up of relatively discrete segments of work (i.e., occupational groups) within which the laws of supply and demand could be employed to explain the experiences and careers of workers. Between segments, however, the interplay between the mechanisms of supply and demand could, and did, provide for quite different careers. Thus the attempt to utilize one general model of supply and demand for all occupational groups could lead to quite misleading, if not incorrect, results for any number of segments (e.g., occupations).

Some time later, during another conversation with a colleague at a national educational conference, it occurred to me that if correct the concept of segmented labor markets could have significant impact upon our understanding of the interplay between schooling and the world of work.

Hithertofore most, if not all, of past research on the effects of schooling on work, specifically on individual occupational attainment, have assumed that the laws of supply and demand operate in a relatively homogeneous manner across the wide range of occupations which makes up the labor market. If this assumption proved to be wrong, then there were reasons to question the results of that research. With regards to the effects of educational origins upon work careers, a particular interest at the time, there were good reasons to question the generally accepted finding that it mattered little where one goes to school.

Given that notion, the movement to the present research project was a relatively direct one. After presenting a paper at another conference on these thoughts, the opportunity arose to submit an informal proposal to the National Institute of Education for funds to carry out research in this area. A formal application for funding to the Institute followed in the fall of 1977. Formal approval was granted in the early spring of 1978 and research was initiated later that spring, the results of which are described and discussed in the following pages.

Though the focus of the present study is limited to the question of the effect of college origins upon individual occupational careers, it should be apparent that the implications of this work go far beyond this one question. Should the results of this research challenge, as it does, the correctness of past research in this area, then there are good reasons to question the results of much of the past research focusing on the interface between schooling and the adult world of work. More importantly, there would be reasons to question the validity of numerous educational and social policies designed to alter that interface to achieve desired social goals (e.g., policies to utilize schooling to equalize social opportunities for differing social and racial groups in society).

If this is the case, as I believe it to be, then the field of educational and social stratification is far from being closed as many have recently maintained. Indeed, it is only begun to be explored despite the great deal of work which has hithertofore served to establish our ways of thinking about schooling and work. If this small project helps to re-open the field to new research and to new ways of conceiving of the interplay between schooling and the occupational world, then it would have more than served its purpose.

As with any piece of work, no single person, the researcher included, can claim total responsibility for its outcome. Though it is undoubtedly true that the present work, its results and views, are my responsibility only, I am indebted to a large number of people who, in a great variety of ways, have impacted upon this work. First and foremost, I am deeply indebted to Ivan Charner who, while working for the National Institute of Education, was instrumental in the birth of the present research project. So also am I indebted to Patricia Graham, past director of NIE, whose decision in a time of tight budgets to spend some of her own Director's funds on this project, made this research possible.

At the same time, I need thank the various persons of NIE who have served, at different times, as project monitors, namely Ivan Charner, Robert Wise and Carter H. Collins Their understanding and patience was much appreciated. Outside NIE, I owe a debt of thanks to that economist, whose name I have long ago forgotten, who first planted in my mind the seeds of this study. It is such sharing-conversations which are, more frequently than we are want to recognize, the impetus of much of our work as researchers. Closer to home, I would like to thank my colleagues at Syracuse University, especially Professors Thomas Green, Emily Robertson, Gerald Grant, Susan Barker and Alan Mazur, who have in a number of ways contributed to my thinking on this matter. So too must I recognize the contributions of Professors John Weidman at

the University of Pittsburgh and Jeylan Mortimer of the University of Minnesota who read and commented upon various parts of this report during its writing. Their willingness, as colleagues and friends, to take the time to read and critically comment upon earlier drafts was very much appreciated. More importantly, it was very much valued. Thanks must also be given to Mr. Michael McMullen for his assistance with several problems in computer analysis and to Ms. Jane Frost for her typing and patience in putting up with my often obscure drafts. Similarly I owe a debt to the numerous students with whom I have discussed these matters, especially those of the department of Cultural Foundations of Education of Syracuse University. Finally, though certainly not lastly, I have to say thank you to Patricia Price Tinto, Eda Katharine Tinto and Gabriel Claire Tinto for having put up with an often pre-occupied husband and father whose research took up more of this family time and energies than was frequently warrented. It is my fondest hope that my daughters will some day come to more fully understand both the whys and the immeasurable joys of serious, frequently preoccupied, intellectual inquiry.

CHAPTER ONE

INTRODUCTION

The research reported herein focuses on the effect of college origins upon individual occupational attainment. The question is posed whether the attributes of the college one attends impacts significantly upon subsequent patterns of educational and occupational attainment. Does going to a high as opposed to a low quality college lead to greater occupational attainment after college graduation? If there is a discernible impact, by what mechanism does it take place?

Though it is fairly well documented that a disproportionate share of successful people come from the 'better' colleges (e.g., Mills, 1956), there is no clear indication that the colleges are themselves responsible for that success. Persons attending high quality colleges tend to be considerably brighter and come from considerably more well-to-do families than do individuals attending lower quality institutions (Karabal and Astin, 1975). As such they are more likely, on their own, to be more successful in the occupational world than are graduates of lower quality institutions. Thus the simple observation that successful people tend to come from colleges of higher quality does not, in itself, establish the importance of college origins in the occupational attainment process.

What is required is the separation of the impact of individual attributes upon adult attainment from that which is attributable to the college per se. It is the attempt to discern this independent impact of college origins (college quality) upon adult occupational attainment that is the primary focus of this study.

In this case it will be argued that such a determination must be sensitive to the segmented character of the labor market within which colleges operate. Labor markets have been shown to be fragmented (or balkanized) into a number of relatively autonomous segments, each with its own characteristic structure of work and patterned chains of opportunity linking up the supply and demand for labor within that segment. Since educational institutions, like colleges and universities, are an essential part of the institutionalized opportunity structure of any occupational segment, their importance in the attainment process may be as much a function of the dynamics of the particular occupational segment within which they operate as it may be of the attributes of the individual institutions. Thus the study of the effect of college attributes upon individual occupational attainment need be carried out separately for differing occupational segments rather than for all segments lumped together. In this instance, the present study will concern itself with the determination of the impact of college origins (quality) upon adult attainment in the professional and the business-managerial segments of the occupational world.

That determination is, however, only part of the purpose of this study. Having ascertained the existence, if any, of the independent impact of college origins (quality) upon attainment in differing occupational segments, it is also the aim of this research to inquire as to the character of that effect. For example we will ask whether the effect of college origins lies primarily in the ability of collegiate institutions to train students (Kerr, et al., 1960; Clark, 1962; Trow, 1972) or largely in their presumed capacity to sponsor graduates into elite occupational positions irrespective of ability (Collins, 1971; Kamens, 1974). That is, we will inquire as to the 'meritocratic' and/or 'socially selective' character of the effect of college origins upon subsequent occupational attainment.

In so doing we will also ask to what degree and in what manner the impact of college origins varies among college graduates of differing social backgrounds. Though some researchers have argued that the effect of colleges upon attainment is largest for the children of the existing social elite (Bowles and Gintis, 1976; Collins, 1979), other evidence does not support this 'revisionist' view of the higher educational system (Tinto, forthcoming). We will attempt to resolve this debate in a manner which distinguishes between the types of occupation segments into which individuals seek entry (i.e., professional and business-managerial).

Schooling and Work: The Implications of Research on College Origins

The study of the effect of college origins upon adult status attainment is part and parcel of the broader study of the character of educational and social stratification in the United States. The research presented here addresses a set of questions which lie at the very core of the study of the role of education in the status attainment process. Namely it concerns itself with the degree and manner in which varying types of collegiate institutions link themselves up with the occupational world. Furthermore, it attempts to resolve the ongoing debate as to the social character of that linkage. In so doing, the research seeks to shed additional light on the question of the underlying nature of the educational and social stratification systems; that is, whether those systems are primarily meritocratic or socially selective (i.e., socially discriminatory) in nature.

Yet the posing of questions of the impact of college origins upon occupational attainment is of more than academic interest. Answers to the questions described above impinge as well on important issues in current educational and social policy, especially those pertaining to educational and social equality. Specifically, the research reported herein speaks to the efficacy of current policies designed to manipulate patterns of higher educational attendance as a means to reduce social inequality writ large.

Over the past thirty years it has become increasingly evident that there have been marked reductions in the gap which characterizes rates of educational participation of various social, ethnic, and racial groups in the United States. Among males aged 18-24 years old, for example, the gap in higher educational attendance between blacks and whites has declined from 18.4 percent in 1970 to only 8.0 percent in 1978. Among similarly aged females, it has diminished from 5.6 percent in 1970 to only 3.3 percent in 1978. Furthermore, among persons of similar racial backgrounds, it is now apparent that persons of lowest income groups go on to higher education almost as often as do persons of moderate income levels (The Condition of Education, 1978). At the point of entry to the higher educational system then, the evidence points to a significant shrinkage in the differences in rates of participation, at least as they exist between difference racial, sexual, and ethnic groups.

Yet differences among those groups in rates of college completion (four-year) have not declined proportionately. Indeed, for some groups differences in overall rates of four-year college completion are somewhat larger today than they were thirty years ago (The Condition of Education, 1978). Among black and white males over the age of twenty-five, for instance, the gap in rates of college completion has grown from little over 5 percent in 1950 to almost 11 percent today. But over the same period, differences between them in the median years of schooling completed have shrunk from 2.6 years to 1.7 years.

Gains in rates of entry to the higher educational system appear then not to have been converted thus far into equivalent gains in rates of exit from the system, at least as it is seen at the four-year college level. More importantly, they have not yet been translated into substantial reductions in the differences in adult social attainment which characterizes those groups. Since this is presumably the ultimate goal of current social and educational policies designed to eradicate educational inequality, the question inevitably arises as to the causes of their apparent failure.

Responses to this politically sensitive issue range from the accusatory (e.g., those which blame elite interests) to the exculpator (e.g., those which look to the inevitable frailties of human action). Some thoughtful observers of the educational scene have noted that the period of diminishment of the gap of higher educational enrollments of diverse social and racial groups is also one characterized by an enhanced differentiation in the patterning of attendance at different types and levels of higher educational institutions (Tinto, forthcoming). Specifically, some commentators have wryly observed that gains by minority groups in entrance to higher education have been more than matched by increased separation in the types of educational services different groups have received in the higher educational system (e.g., Karabel, 1972). Whereas majority groups (upper and middle-class whites) have increasingly migrated to the upper echelons of higher educational system, minorities and poor children generally have become increasingly located in the lower segments of the system, especially in the public community and junior colleges (see Lavin, et al., 1979, for an example of this phenomenon as applied to the New York City Open-enrollment experience).

It is argued that it is this differentiation of differing groups among higher educational segments of varying quality that underlies the failure of minority groups to make significant inroads in the rates of exit from the higher levels of the higher educational system. Evidence suggests that lower quality institutions, especially the two-year colleges tend to turn away or 'cool-out' lower class persons from seeking further entry to and completion of the higher levels of the collegiate system (Clark, 1960; Karabel, 1972). As a result, gains in rates of entry to the higher educational system generally and the lower segments in particular are not translated into equivalent gains in four-year college completion.

In a similar fashion, it is also argued that the growing differentiation of individuals among institutions of varying levels and quality underlies, in part, the failure of minorities in particular and lower status persons in general to make significant inroads in the higher echelons of the occupational world. This is assumed to be the case on one hand because of the demonstrated relationship between level of educational attainment and subsequent occupational attainment and on the other because of the assumed relationship between the quality of college attended (at any level) and success in both subsequent educational and occupational attainments.

As such, commentators urge the redesigning of educational policies to counteract the growing differentiation of educational participation in American society. That is, that future policies be structured so as to deal not so much with the question of who goes to college (as it has in the past) as with the question of who goes where to college.

The phrasing of such policies depends of course on the assumption, noted above, that quality of college attended matters, at least as it pertains to subsequent educational and occupational attainment. Yet it is precisely this assumption which is the object of much debate in the academic world. It is this assumption which is the focus of this study.

Structure of the Report

In describing the research which has been carried out to test the assumption of the impact of college origins (quality) the following report is divided into a number of different chapters. The next chapter (Chapter Two) considers the research on this question. It will do so in a manner which gives rise to the analytic strategy adopted for this research. That strategy, the data, and the statistical techniques employed in the testing of the question of college origins are described in Chapter Three. Chapters Four and Five then turn to a description of the data analysis. Chapter Four describes the analysis carried out to test the question of the effect of college quality upon subsequent educational and occupational attainment. Chapter Five presents the data analysis which was performed to determine the relative effect of college quality upon the occupational attainments of different social groups. Each of these analytic chapters is, in part, self-contained. That is, each describes the analysis for the question at hand and provides an initial discussion of the results for that question. Chapter Six summarizes the results of the entire research project. Furthermore, it discusses the theoretical and policy implications of the research findings as they are seen in the light of current work in the field. A final section of that chapter presents suggestions for future research; suggestions which follow from both the strengths and weaknesses of the current research project. At the end of the report is a bibliography and several appendices of statistical tables and related analyses. The latter is entirely composed of tables and figures which would otherwise have appeared in the body of the text. They were not so included so as to ensure adequate readability of what is a highly statistical piece of research.

CHAPTER TWO

RESEARCH BACKGROUND

The Impact of College Origins upon Occupational Attainment

A number of recent studies of intragenerational mobility have challenged the widely held belief among parents and educators alike that where one goes to college has significant impact upon one's future success in the occupational world. Studies by Jencks, et al. (1972), Sewell and Hauser (1975), Treiman and Terrell (1975b), and Alwin (1974, 1976) have found that differences between the colleges individuals attend have little impact either upon earnings or occupational status attainments after completion of schooling. Alwin (1974, 1976) and Sewell and Hauser (1975), for example, studied the earnings and status attainments of a state-wide sample of 1957 Wisconsin high school graduates followed over a ten-year period. Employing a range of college attributes, they found that college origins do little to explain the variance across occupations in individual post-collegiate attainments. Once one accounts for the fact that particular colleges, normally those of higher academic quality, attract and/or recruit persons who are both more able and from higher social status backgrounds, where one goes to college appears to have little impact upon status attainments outside of its impact upon the subsequent completion of graduate degrees. Though it is recognized that persons from higher quality colleges do better in the occupational world than do other college graduates, their relative success is seen to reflect their own attributes and skills rather than those of the colleges they attend. As Sewell and Hauser (1975) point out, the total effect (direct + indirect) of college origins upon earnings and status attainment is quite small. When all occupations are considered together, differences in college quality account for no more than three to four percent of the variance in the attainments of college graduates.

It should be pointed out that separation of this sort of input (student attributes) from process (college impact) and intermediate outcome factors (graduate degrees) may seriously misrepresent the impact colleges may have upon the future occupational attainments of their graduates. The very fact that higher quality colleges serve as arena for the meeting and socializing of persons who are themselves more likely to be successful in the future may itself be an important part of the status attainment process. Patterns of interpersonal affiliations which may result from their meeting may well serve as important future linkages to job access (Crain, 1970). Furthermore, though the impact of college origins upon the completion of graduate degrees is seen as an indirect effect, it is nevertheless a significant one (Spaeth, 1970). For a number of occupations, especially professional ones, the possession of an advanced degree is a virtual necessity for occupational entry.

While there is little reason to doubt the finding that college origins have little overall impact upon status attainment generally, that is among all occupations considered together, there is evidence which leads us to suspect that the same conclusion may not be warrented when one takes account of the complex and segmented character of the labor market. In treating all occupations together in some uniform scale of status and/or prestige, past studies of educational and status attainment have implicitly argued that the labor market is essentially an undifferentiated entity, one in which processes of career attainment are largely invariant across different segments of the labor market. In this sense, past studies of status attainment through schooling have relied primarily on the classical human capital theory of the labor market.

Yet recent work in the theory of bilateral or segmented labor markets directly questions the validity of such an argument. Classical human capital theory tends to treat all industries and occupations as if they operate in a single labor market. Both individuals and industries and occupations are, in this view, largely homogeneous, that is, neither of the two operates in segmented or balkanized markets. A higher wage reflects a higher marginal productivity of the worker regardless of occupation. In contrast, the theory of bilateral or segmented labor markets argues that both sides of the market, supply and demand, are segmented (Caplow, 1965; Montagna, 1977). The supply side (individuals) is represented by the human capital factors of education, ability, technical skills, and on-the-job performance, and the social factors of race, sex, social origins, migration of workers, and amount of information about the labor market. The demand side (occupation) is represented by organizational factors such as the occupation and industry in which the individual is located (Kalleberg and Sørensen, 1974).

In this sense occupational sociologists have often characterized the occupational structure as being made up of distinct occupational groupings or situses each consisting of a set of related occupations sharing important functional similarities in both the structure of work and the patterning of career attainments (Morris and Murphy, 1959). The occupational structure is thus seen as being comprised of distinct yet parallel status systems each with its own characteristic mode of mobility (Hatt, 1950). For most highly educated individuals, mobility is likely to occur within these systems.

Segmented Labor Markets and Occupational Attainment

Wage and status attainment are determined by both forms of labor market segmentation. Bluestone, Murphy, and Stevenson's (1973) study of wage earning among working poor found large differences in earnings not only between race-sex groups within the same industry, but also between industries and occupations even when race, sex, and education are controlled. As to the importance of structural attributes of the occupational market, Wachtel and Betsey (1972) note that a substantial amount of unexplained variance in wage earnings can be accounted for by the inclusion of structural variables of occupation and industry even after prior inclusion of attributes of the workers. A study of wage earning among Black and White workers by Stolzenberg (1957b) reinforces this point while stressing the need for additional research which treats processes of wage earning as being occupation-specific in character. Spilerman's (1977) analysis of the patterning of occupational careers takes a similar position regarding the study of occupational attainment. In this instance, emphasis is placed upon the need to distinguish between the inter- and intra-occupational movements that mark occupational histories. The process of attainment which underlies the former may be substantially different from that which characterizes the latter.

In the study of education and occupational attainment, it is of interest that though recent work has taken note of the segmentation of the supply of labor, comparable segmentation of the demand for labor has been largely ignored. Studies, for instance, of patterns of status attainment through schooling of Blacks and Whites (Coleman, Berry, and Blum, 1972; Porter, 1974; Stolzenberg, 1975a; Featherman and Hauser, 1976b; and Kerckhoff and Campbell, 1977) and of males and females (Alexander and Eckland, 1974; Treiman and Terrell, 1975a; Featherman and Hauser, 1976a; and Spaeth, 1977) have established the fact that processes of attainment can be substantially different for different segments of the supply of labor. Though studies of attainment among specific occupations such as among engineers (Perrucci and Perucci, 1970), scientists (Zuckerman, 1970, 1977), university professors

(Hargens, 1969; Crane, 1969, 1970), lawyers (Smigel, 1964) and business leaders (Keller, 1953; Mills, 1956; and Domhoff, 1967) give evidence of significant differences in the processes of career attainment between occupations, for instance among professional and business-managerial occupations, the implications of such work for the study of education have not been explored.

As regards the impact of educational attainment generally and of college origins in particular, there are reasons to suspect important differences in both the degree and manner in which formal education influences the process of career attainment in different occupations. With respect to the professional and business-managerial occupational situses, evidence suggests that education is more important in the former occupations than in the latter ones.

Professional occupations, relative to business-managerial ones, are more characterized by the presence of intellectual technique and an established body of knowledge reinforced by research and education acquired by special training within formal educational settings themselves maintained by members of the occupation (Carr-Saunders and Wilson, 1944; Hall, 1975). As such applicants to professional occupations may be expected to undergo more extensive training and more far-reaching socialization in formal educational settings than would members of business-managerial occupations (Goode, 1960). For the latter group, there is reason to believe that more of those training and socializing activities, especially as they pertain to career advancement, occur within the work setting, that is within the firm or corporation, than in formal educational settings (Hall, 1975). Professional training and socialization, and therefore professional careers, are likely then to also reflect the attributes of the educational settings within which such activities take place. Business-managerial careers are, in comparison, more likely to mirror the characteristics of the work setting and the broader attributes of the organization within which work takes place.

With respect to the role of formal education one would therefore expect members of professional occupations to have higher levels of educational training than would individuals in business-managerial occupations. Professional careers are also more likely to be influenced by educational attainment than would careers in business-managerial occupations (e.g., that variance in attainment among the former occupations are likely to be more determined by educational attainment than in the latter ones). Furthermore, since college origins as measured by academic quality are likely to be associated with the manner and degree to which differing institutions train and socialize their students (Astin, 1965), it may also be expected that college origins would be more important in the process of career attainment among professional occupations than among business-managerial ones.

Though past studies of attainment within specific occupations lend some tangential support to these suppositions (e.g., Crane, 1969; Perrucci and Perrucci, 1970; and Taubman and Wales, 1974), none of those studies were designed to specifically test the questions implied in the above analysis. The purpose of the present study is to consider these questions more carefully, specifically to ask whether the process of occupational attainment through schooling which characterizes professional occupations is different from that which marks careers in business-managerial occupations. Moreover we will seek to determine whether college origins do impact upon attainment in those occupations and whether their impacts differ within each occupational situs.

College Impacts upon Level of Entry to the Occupational World

In seeking to analyze the variable impact of schooling upon adult occupational attainment, researchers have come to distinguish between that impact which occurs through level of entry into the occupational world (i.e., first job status) and that which takes place after initial entry via subsequent occupational mobility.

The general consensus of research in this area is that education's primary impact upon occupational attainment occurs through its effect upon level of entry into the job market (e.g., see Blau and Duncan, 1967; Duncan, Featherman, and Duncan, 1972; Kelley, 1973; and Ornstein, 1976). Kelley's (1973) study, for instance, of the occupational careers of individuals from the Princeton Fertility Study indicates that the direct effect of one's education upon occupational status declines over time from a high of .618 (standardized partial regression coefficient) for first job to .182 for a period eight years after first job entry. Once entry to an occupation takes place, prior job status proves to be the best predictor of subsequent job status even when additional education has been obtained (Ornstein, 1976, p. 167).

As the life cycle progresses, it is evident that occupational status (and income) becomes increasingly more determined; unexplained variance declining steadily from first job entry. At the same time, the impact of one's education upon occupational status declines. Thus it is commonly asserted that education's primary impact upon occupational status lies more in its providing individuals with a certificate for entry into the occupational world than in its ability to train individuals in the types of skills required for future job success. Were the latter the case, one would expect educational attainment to remain influential in occupational attainment after initial entry has taken place.

One should recall, however, that these studies refer to the impact of educational attainment measured in terms of years of education acquired prior to job entry. They do not concern themselves, as we will here, with the quality of education received. Thus, such studies as those cited above cannot determine to what degree different types of collegiate institutions provide for varying degrees of entry into the job market and/or instill in their graduates the types of skills required for successful performance on-the-job after entry takes place.

At the collegiate level this distinction between amount of education obtained and the quality obtained is especially important. As Berg (1970) observes, differences in the amount of education acquired by high school and college graduates do little to explain subsequent on-the-job performance. That is, simple differences in the number of years of education obtained by those graduates appears to be largely unrelated to on-the-job performance.

It can be argued that the failure to observe such differences lies in the inability of simple measures of educational attainment to capture the great variation in training which occurs within the high school and college sectors. On the other hand, there are reasons to believe that measures of collegiate quality (e.g., academic quality) do in fact mirror important differences between institutions in their ability both to sponsor their graduates to high status job and to train them in skills essential for successful job performance (Astin, 1965). If this is the case, as we suspect it is, then studies of long-term occupational attainment which include measures of academic quality may yield different results from those noted above which measure number of years of schooling only. For this reason, we will distinquish between first job status and that which occurs seven years after college graduation.

Sponsorship to Work Among Different Social Groups: The Variable Impact of College Origins upon the Careers of Differing Social Groups

Once the possibility exists that college origins do matter, at least for some occupations and/or occupational segments, then the important and still much debated question of educational sponsorship to work takes on new meaning. In seeking to ascertain for whom and in what manner educational institutions influence status attainment, most studies have lumped all occupations together. They have assumed, in effect, that patterns of educational sponsorship are invariant across different occupational segments; that is, that the manner in which institutions differentially sponsor, if at all, varying individuals to work is substantially the same in differing occupations. But as evidence mounts that the study of educational impacts upon work is more properly carried out with regard to distinct occupational segments, it follows that the assessment of differential patterns of educational sponsorship need also be occupational specific in character.

The debate over the social character of educational sponsorship has been carried out, for the most part, between two schools of thought; schools which draw their inspiration from two divergent views of the underlying dynamic of social systems generally and social stratification in particular. One, commonly referred to as a meritocratic or technical view of schooling, is a derivative of the structural-functional tradition in sociology (e.g., Kerr, et al., 1960; Clark, 1962). The other, most frequently categorized as revisionist in character, springs from the conflict school of sociology (e.g., Bowles and Gintis, 1976; Collins, 1979).

The technical or meritocratic view of educational stratification sees schooling, especially higher education, as serving as meritocratic training grounds for the provision of highly trained labor to a market place marked by changing technologies (Kerr et al., 1960; Clark, 1962). As occupations require an increasing degree and variety of technical skills in the performance of work tasks, so too it is required of employees to develop and/or possess those skills in the process of job performance (Davis and Moore, 1945). To the degree that education is seen as the primary agency through which those skills are acquired, then it follows that educational requirements also change. Not only are requirements increased, they are also shifted to emphasize those skills, increasingly technical in nature, demanded of potential employees. Since positions must, in this view, be filled by persons who have either the native ability or who have acquired those skills, so too must those persons obtain the educational requirements associated with job entry and job performance. Given the meritocratic norm, indeed the functional necessity, that ability and/or performance, rather than social origins, be the prime determinant of skill acquisition and educational progression, one would expect the most able (as well as most ambitious) to garner those skills and gain differential entry to the more demanding (high status) positions in society.

As the higher educational system is seen, in this view, to be hierarchically arranged according to merit (or in our terms academic quality), so also would one anticipate the more able persons at the higher quality colleges to fare better in the competition for high status positions than other less able persons generally and those attending lower quality colleges in particular. Admittedly there will always be some social selectivity in the types of individuals benefiting from the educational system. If only because of differences patterns of socialization, schools and colleges will tend to favor, to some degree, the children of the socially advantaged over those of the disadvantaged. Nevertheless, within these constraints, for instance among those entering college, one would expect colleges to differentially promote and sponsor those of highest proven ability, irrespective of social origin.

The revisionist perspective argues, however, that this is not the case. Rather they contend that schooling, especially higher education, differentially promotes and sponsors to work the children of the social elite over those from less advantaged backgrounds. As such they see higher education as serving to preserve and transmit status inequalities across generations. Though skills may be a consideration, they are, in this perspective, minimal at best, or at least secondary to those of social status origins (Collins, 1971, p. 1008).

The struggle between status groups for wealth, power, and prestige is carried out primarily through organization, especially those within the occupational structure. In seeking to maintain and/or enhance control over particular work organization, reigning status groups have tended to employ educational requirements and patterns of differential educational participation as devices to ensure the recruitment into the occupation of members of the same or like status group. The main activity of educational institutions, in this regard, is not the development of technical skills, but the socialization of persons into the culture of those status groups (Kamens, 1974; Collins, 1979). This is accomplished either through the differential recruitment of status group members from particular colleges (i.e., prestigious colleges which draw their students primarily from those status groups) and/or from within colleges via the recruitment of high status children from institutions attended by a wide range of individuals (see Kamens, 1974 and Karabel, 1972). Within the institution, this may take the form of differential encouragement or counseling (Clark, 1960 and Kamens, 1974) and/or differential sponsorship of individuals to work (Turner, 1960; Perrucci and Perrucci, 1970; and Collins, 1979). In the educational system, then, one would expect educational origins to be important to status attainment and, within institutions, social status backgrounds to be more important than ability alone. Where there are clear distinctions in the status groups participating within the system and within institutions, one would also expect clear differences to arise in the manner in which educational progression and occupational attainment occurs (for examples of this as applied to males and females and to Blacks and Whites, see Alexander and Eckland, 1974; Treiman and Terrell, 1975; and Porter, 1974).

In attempting to assess which of these perspectives is of greatest merit, it is important to recognize that each requires attention to the occupation-specific nature of the education-work linkage. Though this is most clear in the case of the revisionist perspective, as it emphasizes the occupation and/or organization specific nature of the conflict between competing status groups, it is also true of the technical and/or meritocratic view as well. In the latter, specific technical and/or skill requirements are likely to reflect the characteristic structure of work tasks which mark differing occupations (see Spaeth, 1977). As such patterns of recruitment will also be occupation-specific in nature. Yet it is precisely the occupation-specific sorts of assessment that have received least attention in the study of the linkage between education and work.

The present study represents then an attempt to initiate an assessment of these perspectives as they pertain to the question of educational sponsorship to different occupations. Specifically, it focuses on the differential patterns of status attainment of college students who enter and persist within different occupational categories. It asks to what degree and in what manner educational origins, social status backgrounds, and academic performance impact upon early career attainment and, how, if at all, those impacts differ for persons from different social status backgrounds. Are children of the social elite recruited in a manner different from less advantaged backgrounds? To what degree does merit or performance, as compared to parental attributes, influence subsequent occupational careers of such persons? And what is the impact of educational origins, in particular those of one's college, upon those careers? Furthermore, given the distinction between first job status and subsequent job status, we will also inquire as to the variable impact of college origins upon level of occupational entry and subsequent occupational mobility for those groups.

The Research Questions Summarized

To summarize, the research which follows is addressed to two main questions. One deals with the impact of college origins, defined in terms of college quality, upon subsequent occupational attainment in both professional and business-managerial occupations. The other focuses on the relative impact of college origins upon the attainment of persons of varying social status. In each case, there are a number of associated questions which arise in the analysis of the larger questions which will also be the focus of the research project. The larger questions and their associated sub-questions are rephrased below in strict question format. This is done to assist the reader in pinpointing the precise focii of the research whose description soon follows:

Q1. Does the quality of the college one attends significantly affect one's occupational attainment after college?

1a. If it does so, does the impact of college quality upon occupational attainment differ in professional and in business-managerial occupations?

1b. If it does so, is the impact of college quality upon occupational attainment largely indirect (e.g., through its possible effect upon further educational attainment) or direct, independent of other effects?

1c. If it does so, is the impact of college quality upon occupational attainment primarily through its effect upon level of entry into the occupation (first job status) or upon its effect upon mobility after initial entry into the occupation?

Q2. Does the impact of college quality upon occupational attainment vary for different groups of students as defined by their social status origins?

2a. For which group of students, defined by their social status origins, is the effect of college origins upon occupational attainment the largest? The smallest?

2b. In what manner and to what degree does the effect of college origins upon the occupational attainment of different groups of students, defined by their social status origins, vary as a function of their ability?

2c. In what manner and to what degree does the effect of college origins upon the occupational attainment of different groups of students, defined by their social status origins, occur indirectly (e.g., via further educational attainment), or directly independent of other effects?

2d. In what manner and to what degree does the effect of college origins upon the occupational attainment of different groups of students, defined by social status origins, occur through its impact upon level of entry into the occupation (first job) or through its impact upon mobility after initial entry?

2e. In what manner and to what degree do the above effects (Q.2a-d) vary among professional and business-managerial occupations?

CHAPTER THREE

METHODOLOGY

Data

The data analyzed here were drawn from the National Opinion Research Center (NORC) longitudinal survey of the educational and occupational activities of a national sample of college graduates of the class of 1961. Participating individuals were surveyed at four different points in their careers; first in 1961 during the senior year in college, then in 1962, 1963, and 1964. A thirty percent subsample of those individuals (of the original sample) who had responded to all four waves (approximately fifty percent of the original sample) were surveyed again in 1968. The present study concerns itself with the activities of the male population in this latter sample (N=2268). A two-stage sampling procedure was employed. Prospective graduates were sampled from 135 different colleges and universities drawn roughly proportional to the number of entrants to graduate and professional schools that those institutions had produced in the past (Appendix B). Since this procedure resulted in an oversample of larger institutions, a weighting system was employed to weight the graduates of smaller institutions relative to those of larger ones. In the present analysis all estimators are based upon the weighted sample.

Given the possibility that the use of weighted data might lead to some biasing of the analyses of college quality, several checks were run on the weighted and unweighted data. These amounted on one hand to a comparison of the college quality and graduate school quality scores for each of the categories used in the analysis. On the other hand, it entailed the running of parallel sets of path analysis employing unweighted data only. Though not reported here, all such checks indicated no serious biasing resulting from the use of weighted data. If anything, the counting of smaller institutions more frequently may have led to some underestimation in the analyses of the effect of college quality upon subsequent behaviors. Smaller institutions tend, on the average, to be those of lower academic quality.

The present analyses also employ only those data for male college graduates. As is seen in Appendix C, the range of occupations into which female college graduates went after graduation was extremely limited. Two major occupations (teachers and social service) provided for most female work after college. As such, the variance in occupational prestige among females was quite limited and highly asymmetric in distribution. Path analysis, in this instance, was not possible. Please refer to Appendix C for a fuller discussion of the female data and its implications for the research questions addressed here.

Before proceeding to a description of the analysis, it must be noted here that the data are, for our present concerns, somewhat constrained in their usefulness. Though none of these constraints are particularly severe, they do deserve comment here. First, in focusing entirely upon college graduates, the data do not allow us to assess the effect of social origins and college quality upon the likelihood that individuals will, upon college entry, complete their college education. Since the probability of college graduation is positively associated both with social origins and college quality (Tinto, 1975), the present analysis necessarily leads to an underestimation of the impact of these attributes upon subsequent occupational attainment. Whether such underestimation is more severe for low as opposed to high status college graduates is unclear. On the surface no evidence exists here that this is the case. Nevertheless, since it necessarily follows that low status college graduates are much more selective in attributes, relative to the general population of persons of low status origins, than are persons of high status graduating from college, the possibility exists that such differential underestimation of college quality effects are present in the current data. For this reason, care must be taken in interpreting the results of analyses carried out on these data, specifically as they apply to the understanding of the effects of college origins upon the longitudinal process of attainment _through_ colleges to work. Strictly speaking, we are concerned here solely with the effects of college origins on attainment as they occur at college _exit_; that is, at the _point of entry_ into the labor force.

It must also be noted that the NORC [illegible] do not contain usable information on native intelligence for more than a small subsample of the total population studied. Though substitute constructs based upon grade point average and college quality were established by NORC, these were deemed of insufficient validity to be included in the present analysis. The absence of reliable measures of native intelligence necessarily constrains the power of the models employed here to account for variance in occupational attainment. Therefore it hinders, in some respects, our ability to analyze the ability-dependent process of attainment within professional occupations. Of course, the desire to increase explanation of variance is, by no means, the only purpose of such analysis.

While the absence of measures of native intelligence does pose some problems in the interpretation of the analysis, the inclusion of measures of college performance (i.e., grade point average) does serve, as an intervening behavior, to capture some if not most of the effects one normally associates with differences in intelligence among individuals. Spaeth and Greeley's (1970) earlier use of these data, which did include a measure of intelligence, indicates that virtually all of the effect of ability upon occupational attainment is indirect. The effects of intelligence are transmitted primarily through grade point average and college quality and only tangentially through its influence upon senior occupational expectations (Spaeth and Greeley, 1970, p. 157). All these intervening variables are utilized in the present analysis.

A more important constraint lies not so much with the data as it does with the very character of the U.S. Census codes of occupations. Specifically, these codes tend to truncate occupational positions within broad occupational categories. Detailed movements within occupations are therefore difficult to observe. Unfortunately, we do not now have at our disposal detailed classifications of occupational positions which would allow researchers to carry out comparative studies of career attainment which would be sensitive to the inter- and intra-firm movements that characterize careers within any occupational sector. Though a number of classifications have been developed for particular occupations (e.g., engineers and lawyers), these have not been standardized in any fashion suitable for present purposes. Until such standardization occurs and/or when more detailed occupational classifications are employed in survey analysis (for instance, see Otto and Spenner, 1979), we must be content, within reason, with those available. Though truncation of positions and therefore variance in attainment exists, there is no evidence in our data that such truncation occurs differentially among the differing social groups graduating from college.

Model

The general model employed in the analysis is shown below in Figure III-1. The paths indicated are for heuristic purposes only. Paths derived from the analysis are shown in subsequent tables and figures. As seen below, the model posits longitudinal relationships between exogenous background characteristics and experiences prior to college (parental education, father's occupational status, and the type of high school attended prior to college) and the quality of college attended. These in turn are viewed as influencing academic performance during college and together with performance, impacting upon the individual's occupational expectations in the senior year

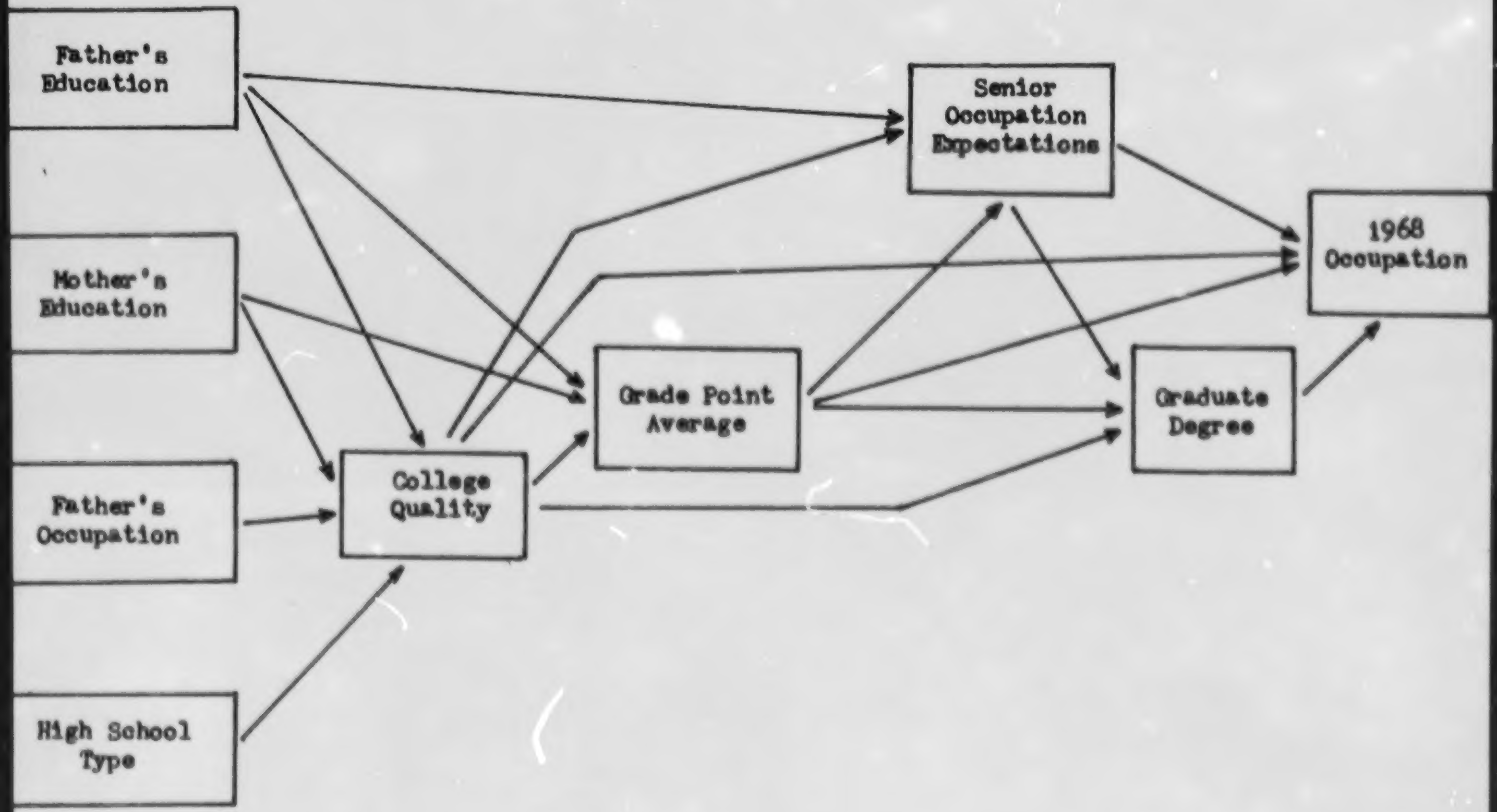
Father's Education
Mother's Education
Father's Occupation
High School Type
College Quality
Grade Point Average
Senior Occupation Expectations
Graduate Degree
1968 Occupation

Figure III-1: Path diagram for a Model of Occupational Achievement among 1961 Male College Graduates

of college. A similar recursive relationship holds for the subsequent completion of graduate degrees. Finally all prior variables are seen as affecting the prestige of the occupation held in 1968, some seven years after college graduation.

When first job status is entered into the model, a pure longitidinal model is no longer possible. For a large number of individuals first job often precedes the beginning and/or completion of a graduate degree program. In that case, the model would have to be a simultaneous model in which first job and graduate degree are entered together into the analysis. Rather than proceed with highly complex simultaneous analysis, a non-time sequential model was employed wherein causal chains were not inferred in the analysis.

Variable Measurement

The exogenous variables were determined in the following manner. Both father's and mother's education were measured on a simple categorical scale specifying the levels of education completed. Seven precoded categories were provided ranging from some elementary school to completion of graduate degrees. Father's occupation was determined for the respondent at age sixteen by asking the respondent to indicate his father's occupational title and characteristics at that time. The prestige of the occupation so provided was then ascertained by referencing the occupational prestige scale developed by NORC

(Seigel, 1971). The same prestige scale was also employed to ascertain the prestige of the respondent's senior occupational expectations and the occupation held in 1968. Type of high school was measured on a simple dichotomous variable specifying attendance at a public(0) or a private (1) high school.

College quality was determined from Astin's (1965) college selectivity scores. These reflect the average aptitude of entering freshmen and are taken to be a measure of the academic quality of the institution. Grade point average is a self-reported undergraduate grade point average measured on a nine point scale (A to D+ or lower). Senior occupational expectations were determined from the respondent's self-report of the occupation he expected to achieve some period after college. Once specified, the prestige of that occupation was determined by utilizing the NORC prestige scale employed to ascertain father's occupational prestige. Graduate degree was a simple dichotomous variable indicating whether the person had obtained an additional degree after college graduation. Only completed degrees were recorded. No credit was given for those persons who had begun graduate work but did not complete a degree program by 1968. In the analyses utilizing quality of graduate school attended, quality was again determined by Astin selectivity scores. Like those developed for undergraduate institutions, these reflect the intellectual character of the entering students which, in turn, are seen to reflect the academic standards of the institution.

In that year, respondents were asked to indicate the precise character of the occupation held. Once described, the prestige of 1968 occupation was determined by using the NORC prestige scale noted above in reference to father's occupation and senior occupational expectations. First job status was determined by the NORC prestige score of the first job the individual held after the completion of college. Only full-time or majority time positions were counted as providing for first job entry into the occupation. In the cases where work was largely part-time, especially during graduate school attendance, no score was given for first job status. However, those cases where graduate school attendance was coterminous with work in the occupation of destination, scores were developed for first-job. Not infrequently, the time-sequence of college completion, graduate school completion and first job entry was not an orderly one in which one follows in step behind the other (see Appendix A).

Method of Analysis

For the first set of analyses, the sample was first partitioned into two subsamples determined by the type of occupation entered after college graduation and held in 1968.

Occupations were divided into two major categories, professional and business-managerial. These were determined by employing the U.S. census classification codes for occupation type. Those persons whose occupations could not be so described were eliminated from the analysis. Given the nature of the sample, namely college graduates, a very large proportion of the total sample fell into these two occupational categories.

For the second set of analyses, these data were further partitioned within each occupational category into three subsamples determined by the status of the respondents' father's occupation when the respondent was age sixteen. Duncan socioeconomic status scores were used for this purpose in the following manner: 0-33 = low status, 34-66 = middle status; 67-98 = high status.

Path analysis was then employed in each of the partitioned samples to evaluate the suitability of the attainment model described earlier. In path analysis the model is expressed as a set of linear, additive regression equations, each including a residual error effect that completely determines the dependent variable of interest. The coefficient of determination (dependent variable explained variance) is presented in the analysis in lieu of this residual effect.

The unstandardized (standardized) path coefficient, the basic statistic of path analysis, is equivalent to an unstandardized (standardized) regression coefficient in recursive models such as those presented here. It assesses the direct, unmediated influence of a given independent variable on a dependent variable with the effects of other variables entered into the regression equation partialled out. Indirect effects implied in the model can be readily computed according to the "tracing" rules of path analysis. The techniques and assumptions of this analytic strategy are discussed in detail in a number of sources (for example see Duncan, 1966; and Land, 1969). In the present instance, both unstandardized and standardized coefficients are shown in the analysis. Nevertheless our discussion will center mainly on the unstandardized coefficients as they measure in an unambiguous form the impact of a change in an independent variable upon the dependent variable of interest. In all equations the zero category for all categorical variables is omitted. Thus the constant of the equation reflects the score on the dependent variable of those persons in the omitted categories and all variable effects are measured relative to the constant term.

An additional set of multivariate regression equations were run in which graduate school quality and status of first job entered were included in the determination of 1968 occupational prestige attainment. This was done in order to determine if any of the effect of college origins upon 1968 occupational attainment was mediated either by the quality of graduate school attended (if any) or by the prestige of the first job entered after college graduation. In this instance, longitudinal path analysis was not possible. Simple time-series analysis revealed that the sequencing of the completion of graduate degrees and entry to first job was in no manner uniform. Among those completing such degrees, as many finished them after first job entry as did before (see Appendix A).

For each analysis we also present the disaggregation of total effects into direct and indirect effect components of the status attainment process. Total effects indicate the degree to which change in an independent variable results in a change in the dependent variable. An indirect effect indicates that portion of the total effect that is mediated by an intervening variable(s). A direct effect is that portion of the total effect which remains after one takes account of the indirect effect of that variable through the intervening variable(s) (Alwin and Hauser, 1975).

Cautionary Comments

It must be underscored that the second set of analyses of the variable impact of college origins among different social groups speaks to the relative effects of different independent variables (e.g., college quality) upon different dependent variables (e.g., occupational attainment) within groups. That is, for instance, that differences in the quality of college attended among persons of high status may or may not make a difference in their relative occupational attainments within professional fields. Our analysis does not permit us to directly assess the impact of independent variables upon the dependent variable between groups. Though we will make comparisons between the resulting models, these are only inferential in nature. Furthermore, in the analysis of the resulting path coefficients we will only take those coefficients to be significant which meet both of the following two conditions. First, that they are significant at or above $p > .01$ level. Second, that the unstandardized coefficients are at least twice the size of the standard error. Though this may seem to some arbitrary and unnecessarily conservative, it is the case that large samples are more likely to yield significant findings than are smaller ones without any lateration in underlying size of effects. Reliance on F-tests alone tends, in large sample surveys, to produce statistically significant but often trivial results.

It must also be repeated that the analyses were performed for male graduates only (see Appendix B). As such, our discussion must be taken to reflect only their experiences, not those of all graduates. Whether the analyses of female experiences would yield similar findings is a question for which we have no answer. Given the very different distribution of female occupational participation, one could only assume that a separate analysis of female careers would have produced a different picture of the effect of college origins upon subsequent attainments. That is, that college effects may well be sex-specific in nature in the same manner that they have been shown to be race-specific (Porter, 1974).

CHAPTER FOUR

COLLEGE ORIGINS AND PATTERNS OF STATUS ATTAINMENT THROUGH SCHOOLING AMONG PROFESSIONAL AND BUSINESS-MANAGERIAL OCCUPATIONS

Introduction

We first turn to the analysis of the impact of college origins upon occupational attainment among professional and business-managerial occupations. We will do so in three distinct parts. First, we will consider the effect of college quality as it may be mediated by subsequent educational attainment measured in terms of the completion of advanced degree programs. Then we will ask whether there are linkages to work between colleges and graduate schools of high quality. In operational terms, this means will we replace the simple completion of advanced degrees with measures of the quality of graduate institution from which those advanced degrees were obtained. Finally, we will ask in what manner and to what degree initial level of entry to work, namely first job status, intervenes in the attainment process described in the preceding two steps of the analysis. That is, we will ask whether the effects of college origins are largely those of providing differential access to the more desirable "ports of entry" of the occupational world or are those which influence mobility beyond initial entry to work. In all phases of the analysis, our concern will be comparative in nature. We will seek to compare the manner in which college origins influence attainment in professional occupations with that among business-managerial occupations. In the process, we will inquire into the interface between the structure of work tasks which characterizes differing occupational segments and the manner in which education links up to attainment in those occupations.

Before turning to the data, it must be recalled that our current analysis concerns only the activities of male college graduates. As noted earlier, the data for female graduates point to a significant occupational tracking into a very small number of occupations (see Appendix C). As such, analyses of the sort described in the following pages cannot be employed to ascertain the effect of college origins upon female occupational careers (i.e., lack of variance in the dependent variable). This should not be taken, however, to imply that data for females are inaccurate. Just the opposite applies here. They do in fact depict a state of the world, in 1961, in which male and female careers followed very different paths through the occupational structure. These differences are more likely to reflect patterns of socialization to work among males and females than differences in the impact of varying colleges upon subsequent careers. This does not mean that college origins may not influence female careers as well. Rather it implies that their effect, during the period under study, are likely to have been considerably less important than prior orientations toward work careers.

The Effects of College Origins Upon Occupational Attainment in Professional and Business-Managerial Occupations

Univariate Statistics

Univariate statistics are shown for each occupational category in Table IV-1. Except for the tendency of persons in business-managerial occupations to have gone more frequently to private rather than public high schools (24.5 to 19.1 percent), it is evident that the two groups are quite similar both in social backgrounds and in the quality of colleges attended.[1] As such there is little direct evidence to support the notion that business-managerial occupations draw their members either from more elite social groups and/or from more

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[1] Though most mean differences were significant at the .05 level, Siegel (1971) points out that only differences of five points or more in NORC prestige scores are likely to have any substantive meaning.

TABLE IV-1

Means and Standard Deviations for Variables in a Model of Occupational Achievement Achievement among 1961 Male College Graduates: Professional and Business-Managerial Occupations *

Variables	Professional Occupations		Business-Managerial Occupations	
	Means	Std. Dev.	Means	Std.Dev.
FED - Father's education	5.107	1.665	5.200	1.553
MED - Mother's education	5.058	1.330	5.066	1.278
FOC16N - Father's occupation	46.190	14.699	48.108	12.198
HSTYP - High school type	0.191	0.393	0.245	0.430
COLQA - College quality	55.687	9.372	56.665	8.987
GPA - Grade point average	6.107	1.543	5.671	1.463
XOC61N - Senior occup. expt.	65.589	9.944	56.238	10.251
HDEG - Graduate degree	0.533	0.499	0.227	0.419
POC68N - 1968 occup. prestige	63.687	10.216	53.791	9.124
FJOBN - First job prestige	61.615	13.239	47.151	8.079
(Number of cases)	(2460)		(714)	

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* Professional and business-managerial designations are based upon categories employed by the U.S. Census Bureau.

prestigious colleges than do professional occupations. It is apparent, however, that the two groups do differ in many other important respects. Specifically persons in professional occupations obtained higher grade point averages in college (6.11 to 5.67), held higher occupational expectations for themselves (65.59 to 56.24), had obtained graduate degrees at over twice the rate as had persons in business-managerial occupations (53.3 to 22.7 percent), and held higher prestige occupations within the professional field than did those in business-managerial occupations (63.69 to 53.79). Given the absence of measures of native intelligence, one cannot determine to what degree, if at all, differences in grade point average reflect differences in intelligence and/or levels of motivation. As the two groups had attended colleges of comparable academic quality and therefore of presumably comparable admission standards, there is reason to suspect that the large differences in grade point average, senior occupational expectations, and in subsequent attainments mirror differences not only in early expectational levels but also in motivations for academic and occupational achievement.

Recall that the very character of the NORC prestige scale is such as to rank occupations of professional type somewhat higher than those of business-managerial type. For all occupations categorized as professional in the U.S. Census codes, the mean NORC prestige score is 57.6 (9.7 std. deviation), whereas for all business-managerial occupations the mean NORC prestige score is 50.5 (8.2 std. deviation). Thus the comparison of means of the groups overestimates, to a degree, the actual differences in their intra-occupational attainments. For the separate path analysis of their intra-occupational attainment, this does not appear to pose, however, any serious problem.

Longitudinal Path Analysis of Status Attainment

Differences in the attainment processes of the two groups are shown by the correlation coefficients and the unstandardized and standardized coefficients given in Tables IV-2, 3 and 4. The resulting path models for each group are depicted in Figures IV-1 and IV-2. The first column in Tables IV-3 and IV-4 treats college quality as determined by four exogenous variables. In both groups, quality of college attended is influenced by social background and the type of high school attended prior to college. Having attended a private high school as opposed to a public one has the greatest impact upon the quality of college attended even after the effects of social background are taken into account. Attendance at a private high school produces a change of 4.29 and 5.62 in the quality score of college attended by persons in professional and business-managerial occupations respectively. Since there

TABLE IV-2

Correlation Coefficients for Variables in a Model of Occupational Achievement Among 1961 Male College Graduates: Professional and Business-Managerial Occupations*

(Professional occupations above diagonal- Business-Managerial occupations below)

Variables	FED	MED	FOC16N	HSTYP	COLQA	GPA	XOC61N	HDEG	FJOBN	POC68N
FED - Father's education		.638	.624	.059	.309	.085	.160	.192	.138	.183
MED - Mother's education	.612		.432	-.007	.273	.079	.142	.185	.108	.163
FOC16N - Father's occupation	.578	.382		.060	.288	.057	.133	.150	.125	.168
HSTYP - High school type	.040	.103	.025		.195	.030	.066	.065	.090	.074
COLQA - College quality	.264	.254	.144	.289		.109	.195	.210	.218	.248
GPA - Grade point avg.	-.003	.012	-.099	-.028	.106		.311	.342	.221	.257
XOC61N - Senior occup. exp.	-.041	-.043	.029	-.005	.022	.075		.327	.389	.467
HDEG - Graduate degree	.163	.179	.130	.103	.158	.104	.037		.254	.381
FJOBN - First job prestige	-.083	-.043	.019	-.011	-.049	.017	.014	.009		.557
POC68N - 1968 occup. prestige	.015	.046	.003	.041	.003	.043	.083	.155	.081	

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* Professional and business-managerial designations are based upon categories employed by the U.S. Census Bureau

TABLE IV- 3

Coefficients in a Model of Occupational Attainment among 1961 Male College Graduates: Professional Occupations

(metric coefficients with standardized coefficients in parenthesis)

Regressor	COLQA	GPA	XOC61N	HDEG	POC68N
FED - Father's education	.709* (.126)	.039 (.043)	.31[illegible] (.032)	.015 (.051)	.076 (.012)
MED - Mother's education	.938* (.133)	.037 (.032)	.297 (.040)	.026* (.069)	.120 (.016)
FOC16N - Father's occupation	.089* (.141)	-.001 (-.009)	.020 (.030)	.001 (.017)	.028 (.041)
HSTYP - High School type	4.288* (.180)	.044 (.011)	.745 (.029)	.026 (.020)	.298 (.011)
COLQA - College quality		.014* (.087)	.130* (.122)	.005* (.099)	.117* (.107)
GPA - Grade point average			1.855* (.288)	.083* (.255)	.357* (.060)
XOC61N - Senior occup. expt.				.010* (.207)	.357* (.347)
HDEG - Graduate degree					4.334* (.212)
Constant	46.646	5.000	43.612	-1.161	26.996
Coefficient of Determination	.151	.015	.133	.202	.297

* significant coefficient at least twice as large as its standard error.

TABLE IV-4

Coefficients in a Model of Occupational Attainment among 1961 Male College Graduates: Business-Managerial Occupations

(metric coefficients with standardized coefficients in parenthesis)

Regressor	Dependent Variables				
	COLQA	GPA	XOC61N	HDEG	POC68N
FED - Father's education	1.119* (.193)	.035 (.037)	-.520 (-.078)	.012 (.043)	-.076 (-.013)
MED - Mother's education	.810* (.115)	.019 (.017)	-.310 (-.039)	.033* (.102)	.324 (.045)
FOC16N- Father's occupation	-.013 (-.018)	-.017* (-.144)	.078 (.093)	.002 (.061)	-.016 (-.021)
HSTYP - High School type	5.621* (.269)	-.222 (-.065)	-.184 (-.007)	.067 (.069)	.726 (.034)
COLQA - College quality		.022* (.132)	.037 (.033)	.004* (.081)	-.040 (-.040)
GPA - Grade point average			.566* (.081)	.028* (.100)	.151 (.024)
XOC61N- Senior occup. expt.				.001 (.032)	.070* (.079)
HDEG - Graduate degree					3.255* (.150)
Constant	51.635	4.833	51.291	-0.502	50.609
Coefficient of Determination	.155	.030	.015	.065	.034

* significant coefficient at least twice as large as its standard error.

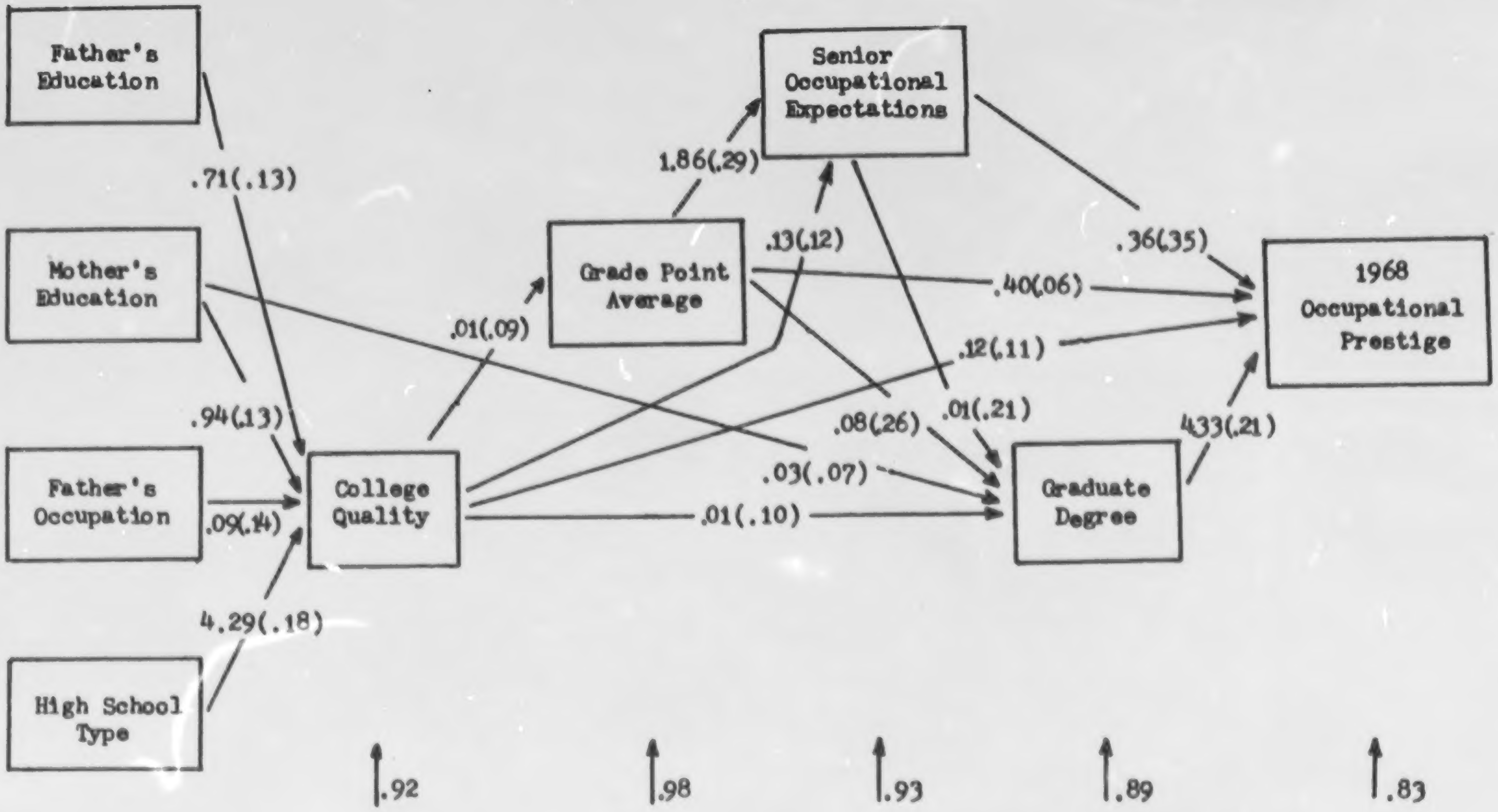
Father's Education
Mother's Education
Father's Occupation
High School Type
College Quality
Grade Point Average
Senior Occupational Expectations
Graduate Degree
1968 Occupational Prestige
.71(.13)
.94(.13)
.09(.14)
4.29(.18)
.01(.09)
1.86(.29)
.13(.12)
.36(.35)
.40(.06)
.12(.11)
.08(.26)
.01(.21)
.03(.07)
.01(.10)
4.33(.21)
.92
.98
.93
.89
.83

Figure IV-1: Path Diagram for a Model of Occupational Attainment among 1961 Male College Graduates: Professional Occupations Only (only significant paths are shown)*.

* unstandardized coefficients with standardized coefficients in parenthesis.

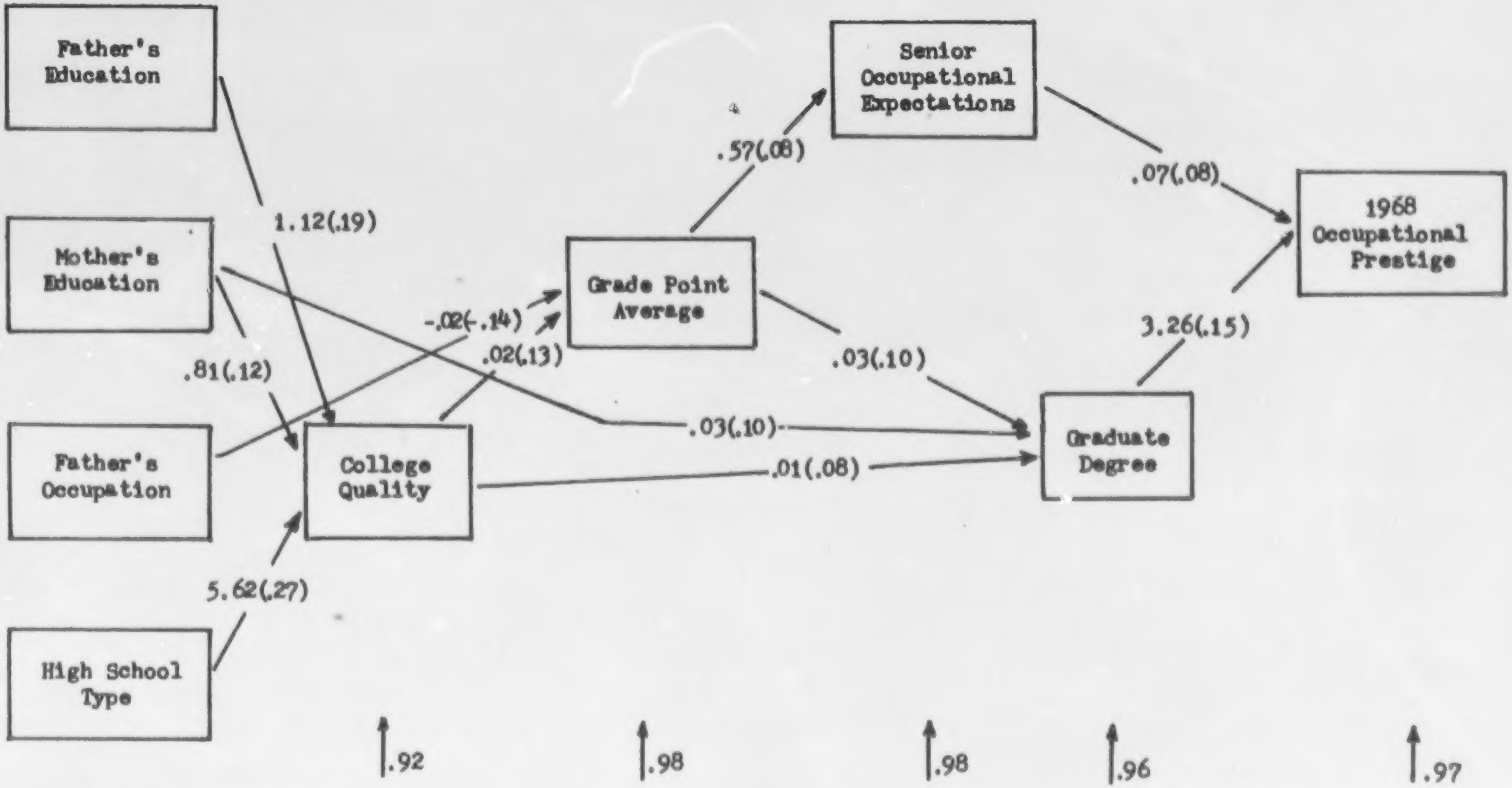
Father's Education
Mother's Education
Father's Occupation
High School Type
College Quality
Grade Point Average
Senior Occupational Expectations
Graduate Degree
1968 Occupational Prestige
1.12(.19)
.81(.12)
5.62(.27)
-.02(-.14)
.02(.13)
.57(.08)
.03(.10)
.03(.10)
.01(.08)
.07(.08)
3.26(.15)
.92
.98
.98
.96
.97

Figure IV-2: Path Diagram for a Model of Occupational Attainment among 1961 Male College Graduates: Business-Managerial Occupations only (only significant paths are shown).*

*unstandardized coefficients with standardized coefficients in parenthesis.

is no evidence of significant differences in native intelligence of students in private and public high schools, these findings suggest, albeit in a tentative fashion, the existence of important institutional linkages between particular types of secondary schools and the more prestigious colleges in the United States; linkages which have yet to be fully explored (see Karabel and Astin, 1975; Griffin and Alexander, 1978).

The process influencing performance in college, as measured by grade point average, is for both groups unclear. As the data do not contain measures of native intelligence, it is not surprising that explanation of variance in grade point average is in no case greater than three percent. Furthermore, as the data deal only with college graduates, much of the possible impact of background attributes and individual abilities is eliminated from the analysis; that is, it is taken up in the attrition between college entrance and college graduation, a process which normally results in a fifty percent dropout rate. In any event, given the possible existence of a "frog-pond" effect (Davis, 1966), it is likely that the positive paths between college quality and grade point average mask significant differences between the ability levels of students attending colleges of different quality.

Determination of senior occupational expectations suggest important differences in the process of occupational expectation formation which characterizes professional and business-managerial groups. Among persons in the former fields, expectations were influenced not only by performance (as they were among persons in business-managerial fields), but also by the quality of college attended. The latter finding is of particular interest as the direct effect of college quality upon expectations (0.13) occurs even after one takes account of its indirect effect through grade point average. Since the same is not true among persons in business-managerial occupations, where explanation of variance is virtually nil, one cannot then argue that the impact of college quality upon expectations is uniform among all members of the institution. Rather the data seem to imply an occupation-specific form of socialization involving a significant interaction between individual achievements and institutional context which leads some persons to expect more of themselves than do their peers in other fields of study (i.e., business-managerial fields).

The completion of graduate degrees, among professionals, was significantly influenced by mother's education (.069), college quality (.099), grade point average (.255), and senior expectations (.207). For persons in business-managerial occupations the same was true except that senior occupational expectations were not significantly related to subsequent educational attainment. Again, an important socialization process is suggested among the former group and not the latter. Furthermore, among professionals, the model employed here accounts for a much greater proportion of the variance in graduate degrees (20.2 percent) than it does among persons in business-managerial fields (6.5 percent). Of course, the possession of such degrees was much more prevalent among the former group than among the latter (53.3 to 22.7 percent respectively).

Finally as to the prestige of occupation held in 1968, it is evident that there are substantial differences, in both form and substance, in the processes of status attainment which characterize the two groups. First, it is clear that the process of attainment among persons in professional occupations is much more determined by the model than is the case among persons in business-managerial occupations (29.7 and 3.4 percent variance explained respectively). For the latter group, one would have to say that the model utilized here is virtually unable to account for their intraoccupational attainments. While truncation in occupational positions resulting from U.S. Census coding may help to explain the apparent weakness of the model among business-managerial occupations, that fact cannot be used to account for the differential power of the model in explaining attainments among professional occupations. Truncation in positions is equally severe among professional occupations.

As to the processes of attainment so described by these models, it is apparent that attainment among business-managerial occupations is, to the degree that the model explains attainment, largely governed in a direct fashion only the senior year occupational expectations and the completion of graduate degrees (unit increases in each producing gains of 0.07 and 3.26 in occupational prestige respectively). The effects of social origins, college quality, and academic performance are all indirect and therefore quite minor. Among professional occupations the process of prestige attainment is directly influenced not only by senior expectations and graduate degrees, but also by the quality of college attended and one's academic performance in that college (unit increases in each producing gains of .357, 4.334, .117 and .396 in occupational prestige respectively).

Attainment among professional occupations is, as anticipated, more influenced by educational activities and attributes of educational settings than is attainment among business-managerial occupations. More importantly, attainment among the former is affected directly by college quality and one's performance therein even after the inclusion of intervening behaviors normally assumed to take up their impact upon occupational attainment. Comparison of the standardized path coefficients further suggests that college quality (.107) is more important in the process of attainment than is grade point average (.060), even though both are less important than are senior occupational expectations (.347) and the possession of a graduate degree (.212). It should be pointed out that the absence of a direct path between college performance and attainment among business-managerial occupations does not necessarily imply that ability does not matter in those occupations. Rather it implies that the criteria of judgment employed in college to assess competence are not very similar to those utilized in the occupation. Among professional occupations, where members of the occupation are often on the faculty of higher educational institutions, those criteria are more likely to overlap those employed on-the-job.

Disaggregation of total effects into direct and indirect effects (Table IV-5) further reinforces the notion that collegiate origins do play a significant role in attainment among professional occupations in our sample of college graduates. Of the total effect of college quality upon prestige

TABLE IV-5

Disaggregation of Total Effects into Direct and Indirect Effects of Background and Process Variables on 1968 Occupational Prestige Attainment Among Professional and Business-Managerial Occupations

Predetermined Variables	Total Effect	Indirect Effects				Direct Effect
		COLQA	GPA	XOC61N	HDEG	
Professional Occupations						
FED	.078*	.025	.010	.020	.011	.012
MED	.079*	.026	.007	.016	.014	.016
FOC16N	.081*	.027	-.002	.012	.003	.041
HSTYP	.065*	.035	.003	.011	.005	.011
COLQA	.196*		.020	.048	.021	.107*
GPA	.227*			.113	.054	.060*
XOC61N	.391*				.044	.347*
HDEG	.212*					.212*
Business-Managerial Occupations						
FED	-.015	-.004	.002	-.007	.007	-.013
MED	.056	-.002	.001	-.004	.016	.045
FOC16N	-.011	.001	-.007	.007	.010	-.022
HSTYP	.036	-.005	-.003	-.001	.011	.034
COLQA	-.019		.006	.002	.012	-.039
GPA	.046			.007	.015	.024
XOC61N	.083*				.004	.079*
HDEG	.150*					.150*

* Indicates a significant effect ($p > .05$).

attainment (.196) 54.6 percent (.107) is direct, unmediated by intervening variables, while 10.2 percent (.020) is transmitted through grade point average, 24.5 percent (.048) through senior occupational expectations, and 10.7 percent (.021) through its impact upon the possession of a graduate degree. This finding appears to contradict those of Alwin (1974, 1976) which argue that the effect of college quality, if any, is largely transmitted through its impact upon subsequent post-collegiate educational attainment. In this instance, over half of the total effect of college quality upon attainment is transmitted directly. On the other hand, only 26.4 percent (.060) of the total effect of grade point average (.227) is transmitted directly. Moreover, sizable portions of the effects of exogenous variables upon occupational attainment among the professions is also transmitted through college quality. It is also noteworthy that over 53 percent (.035) of the total effect of high school type upon status attainment among professional occupations (.065) is transmitted through college quality. Among business-managerial occupations this is certainly not the case.

For both groups, especially among professional occupations, it is also evident that individual initiative matters in subsequent attainment. Among professional occupations, the direct effect of grade point average (.060), of senior expectations (.347), and of the possession of a graduate degree (.212) and the indirect effects of performance through expectations (.113) and graduate degrees (.054) all seem to point to a socio-psychological process of attainment. In this case high levels of academic performance within particular educational contexts (i.e., high quality colleges) serve to promote heightened occupational expectations which impact, in turn, upon subsequent attainments in both further schooling and professional occupations. While the same may apply to attainment among business-managerial occupations, it is apparent that we know much less about the dynamics of attainment in those occupations than we do in professional ones.

Though not shown, the analysis also entailed the development of a set of multiplicative terms estimating the interaction between high school type and father's occupational type (professional and business-managerial) with each of the independent variables. Since each are categorical variables, the coefficients for the interaction terms are equal to the difference between the coefficients for persons from private and public high schools and from families whose fathers held professional or business-managerial occupations respectively. Presence of significant interactions may then suggest that important differences exist, for instance, between persons from private and public high schools which are not adequately accounted for in the current model. With the exception of one very minor effect (i.e., high school type X college quality upon grade point average among persons in professional occupations), no interactive term proved to be of any significance, certainly not in explaining the differences in the models observed in the analysis.

Graduate School Quality and Occupational Attainment

Having considered the total effects of college origins upon attainment, two additional analyses were carried out. First, a set of dummy variables was constructed to assess the impact of graduate school quality upon 1968 occupational attainment in both professional and business-managerial occupations (Tables IV-6 and IV-7, columns A and C). This was done in order to ascertain to what degree the effects of college quality upon subsequent attainment were mediated by the quality of graduate school attended, if at all, after college graduation. A high degree of mediation might well be taken to infer the existence of linking chains of opportunity within the educational structure; ones which eventually provide differential access to the more elite positions within the occupational sphere. A low degree of mediation might, on the other hand, indicate a unique impact of college origins which is unrelated to the nature of one's subsequent educational experience. Among professional occupations, at least,

TABLE IV-6

Effects of Graduate School Origins and of First Job Status on Occupational Prestige Attainment among 1961 Male College Graduates: Professional Occupations Only

(standardized coefficients)

Regressors	Equation			
	A	B	C	D
FED - Father's education	.018	.012	.018	.012
MED - Mother's occupation	.014	.019	.013	.018
FOC16N - Father's occupation	.042	.032	.041	.031
HSTYP - High School type	-.003	.009	-.003	.009
COLQA - College quality	.099*	.052*	.087*	.045*
GPA - Grade point average	.064*	.035*	.056*	.031
XOC61N - Senior occup. expt.	.339*	.217*	.336*	.215*
HDEG - Graduate degree	.212*	.168*	....	....
GRADQ0 - No graduate degree	....	....	-.187*	-.155*
GRADQM - Graduate school-med. quality	....	....	.031	.018
GRADQH - Graduate school-high quality	....	....	.048*	.025
FJOBN - First job status	....	.403*	....	.403*
Constant	27.324	20.992	32.464	24.871
Coefficient of Determination	.285	.416	.286	.417

* Significant coefficient at least twice as large as its standard error.

TABLE IV-7

Effects of Graduate School Origins and of First Job Status on Occupational Prestige Attainment among 1961 Male College Graduates: Business- Managerial Occupations Only
(standardized coefficients)

Regressors	Equation A	Equation B	Equation C	Equation D
FED - Father's education	-.015	-.006	-.013	-.005
MED - Mother's education	.043	.042	.036	.035
FOC16N - Father's occupation	.011	.007	.014	.011
HSTYP - High School type	-.079	-.077	-.084*	-.082*
COLQA - College quality	-.066	-.063	-.069	-.066
GPA - Grade point average	.061	.060	.064	.062
XOC61N - Senior occup. expt.	.103*	.102*	.106*	.105*
HDEG - Graduate degree	.154*	.153*	....	....
GRADQO - No graduate degree	....	....	-.235*	-.233*
GRADQM - Graduate school-med. quality	....	....	-.096	-.096
GRADQH - Graduate school-high quality	....	....	-.042	-.039
FJOBN - First job status	....	.075*	....	.075*
Constant	49.757	49.140	54.845	54.212
Coefficient of Determination	.052	.058	.055	.061

* Significant coefficient at least twice as large as its standard error.

it is commonly assumed that graduate school origins rather than college origins are instrumental in subsequent occupational attainment.

Graduate school quality was determined in the same manner as was college quality, namely by utilizing measures constructed by Astin (1965). In this instance, a set of four dummy variables was constructed such that one dummy represented not having attended a graduate school (GRADQ zero), and three others indicating attendance and completion of degrees at graduate institutions of low, middle, and high quality respectively (GRADQ1, GRADQ2 and GRADQ3). In all analyses, the omitted dummy was GRADQ1, that is having received a graduate degree from an institution of low academic quality. All coefficients on GRADQ then are taken to represent differences in occupational prestige attainment between those persons who attended low quality institutions and those either who have not obtained a graduate degree (GRADQ0) or who have completed degrees at institutions of middle and high academic quality (GRADQ2 and GRADQ3).

As can be seen from a comparison of columns A and C of Table IV-6 and IV-7, it is evident that the addition of measures of graduate school quality does little to improve the degree to which the models account for variation in 1968 prestige attainment in either the professional or business-managerial occupations. Additions to variance explained were 0.1 and 0.3 percent respectively; hardly a significant improvement in explanation. At the same time, it is also apparent that the inclusion of graduate school quality does little either to alter the model of attainment obtained in equation A or significantly mediate the influence of prior variables upon 1968 attainment (compare equations A and C).

As regards the effect of college quality upon attainment, graduate school quality (as opposed to simple graduate degree completion) does not significantly mediate its impact either in professional or in business-managerial occupations. Among the former occupations, in which college quality does have a significant direct impact upon attainment, the addition of graduate school quality results in but a 12 percent reduction in its standardized effect (.099 to .087). And most of this modest mediation occurs via the impact of attendance at the highest quality graduate schools (as opposed to those of low quality)--an impact which is not visible among business-managerial occupations.

Entry to Work: College Origins and First Job Status

Having considered the effects of graduate school quality, two other sets of equations were run in which first job status was entered into the equation prior to 1968 occupational status (Table IV-6 and IV-7 equations B and C). The first (equation B) included first job status with the simple completion of a graduate degree. The second (equation D) contained both first job status and quality of graduate school attended.

In both occupational categories it is apparent that level of entry to work, that is first job status, is a significant independent determinant of one occupational status in 1968. In this respect, the results reported here conform to those reported elsewhere for occupations generally (e.g., Blau and Duncan, 1967; Kelley, 1973; and Ornstein, 1976). Among professional occupations, in particular, the addition of first job status led to a marked increase in the degree to which the model was able to account for variation in 1968 occupational attainment (.416 as compared to .285). Indeed, among those occupations, first job status was the single largest predictor of 1968 attainment, being nearly twice the size of other standardized coefficients in the equation. Among business-managerial occupations this was clearly not the case. Whether this is due to an essential difference in the underlying structural elements of those occupational categories or the difference in the time-span which characterized entry to work and 1968 occupation is here undetermined. In professional occupations, for instance, a larger proportion of persons entered and completed graduate degrees. As a result, a larger proportion of persons first entered the occupation at a point closer to 1968 than was the case among persons in business-managerial occupations. Absence of time for substantial mobility as much as structural factors may then account for the seemingly greater importance of first job status among professional occupations.

It might be noted, however, that inconclusive tests with data drawn from persons who held similar types of graduate degrees in both occupations did suggest that differences in time-span were insufficient to account for differences in first job importance. It may be the case then that professional occupations are structured in a manner which provides for a greater degree of definition to mobility chains within the occupation (see White, 1970). Thus level of entry to that occupation is more important to subsequent variations in career attainment than is the case among business-managerial occupations. Certainly very substantial differences in our models' ability to account for such variation (.417 to .061) imply that this is the case overall.

As to the effect of first job status upon the importance of college origins, it is evident that first job status does mediate, at least in part, the role of college origins in subsequent professional career attainment. In those occupations, the inclusion of level of entry measures reduced the effect of college origins from .099 to .052, a decline of nearly 47 percent (also see Table IV-8). Similarly for other variables, namely grade point average, senior year expectations, and the completion of a graduate degree, first job status substantially mediated their direct effects upon 1968 occupational status. And together with graduate school quality (equation D), first job status totally mediates the significant direct effect of grade point average upon subsequent attainment within professional occupations. Table IV-8, which describes the disaggregation of total effects into direct and indirect effect via first job, simply restates the above, but in a more direct fashion.

Discussion

We began this part of the analysis by referring to recent research which suggests that college origins have little, if any, impact upon the status attainment process. It was noted that much of this research has assumed what is primarily a classical human capital theory approach to the study of education and occupational attainment; namely that the labor market is largely undifferentiated as regards the interplay between the supply and demand for trained labor. In contrast,

TABLE IV-8

Disaggregation of Total Effects into Direct and Indirect Effects of Background and Process Variables on 1968 Occupational Prestige Attainment among Professional and Business-Managerial Occupations: Graduate School Origins and First Job Status

(standardized coefficients)

Regressors	Total Effects	Indirect Effects						Total Effect
		COLQA	GPA	XOC61N	HDEG	GRADQ	FJOBN	
				Professional Occupations				
FED	.085*	.022	.015	.021	.008	.009	.007	.012
MED	.073*	.024	.003	.015	.016	.017	-.005	.019
FOC16N	.080*	.022	.001	.009	.007	.008	.010	.032
HSTYP	-.062*	.034	.004	.017	.003	.004	.013	.009
COLQA	.179*	....	.019	.044*	.017	.029	.047*	.052*
GPA	.230*	....	....	.113*	.053*	.061*	.029	.035*
XOC61N	.379*	....	....	....	.040	.043	.122*	.217*
HDEG	.212*	....	....	....	....	....	.044*	.168*
FJOBN	.404*	....	....	....	....	....	....	.404*
				Business-Managerial Occupations				
FED	-.023	.007	-.003	.007	-.003	-.007	.009	-.006
MED	.052	-.006	.002	.001	.013	.021	.001	.042
FOC16N	.016	-.002	-.010	.008	.010	.010	.004	.007
HSTYP	-.073	-.013	-.006	.001	.012	-.009	.002	-.077
COLQA	-.046	....	-.011	.001	-.010	-.010	.003	-.063
GPA	.089	....	....	.012	.015	.014	.001	.060
XOC61N	.110*	....	....	....	.007	.004	.001	.102*
HDEG	.154*	....	....	....	....	....	.001	.153*
FJOBN	.075*	....	....	....	....	....	....	.075*

* Significant effect where p $>.05$

we argued here that evidence supports the view that there are significant forms of segmentation in the labor market in both the supply (individuals) and demand (occupations) for labor. As such, we further argued that the study of the impact of education generally and college origins in particular upon status attainment is more appropriately approached through an analysis of attainment in different occupations and/or occupational groupings or situses rather than among occupations generally.

In the present instance, given the availability of data on college graduates, we choose to study the process of status attainment through schooling for professional and business-managerial occupations. Those data, drawn from the NORC data files, were of the educational and occupational activities of a national sample of 1961 male college graduates who were followed over a seven year period. Separate path analyses were performed on those persons who had entered and stayed in professional and business-managerial occupations. The results of those analyses were presented in Tables IV-8 and Figures IV-1 and IV-2 and were described in the preceding pages.

As to the results of those analyses, it is evident that the processes of occupational attainment through schooling which characterize professional and business-managerial occupations are quite different. Though our model accounts for a scant 3 percent of the variance in prestige attainment among the latter occupations, it explains nearly 30 percent of the variance in prestige scores among professional occupations. More importantly, it is among those occupations that we found college origins to have a direct impact upon status attainment, one which remains significant despite the inclusion of intermediate outcome variables (grade point average, expectations, and graduate degree attainment) normally assumed to absorb the effect of college origins upon subsequent attainments. Among professional occupations, over half (54.6 percent) of the total effect of college origins upon attainment is direct. Among business-managerial occupations, no direct effect of college origins is observed. For those occupations, it appears to be the case that where one goes to college has little significant impact upon subsequent status attainment.

Level of entry to work, first job status, among professional occupations proves to be a significant element in professional careers. Among business-managerial ones, however, it is not nearly as important. In this respect, the structure of professional careers appears to have a higher degree of specificity in the linkage between various positions on the career track than does business-managerial ones. In any event, though first job status matters, it does not entirely eliminate the importance of college origins upon subsequent attainment.

Thus, the effect of college origins must be as much one of training as it is of sponsorship to work entry. Furthermore, the effect is one which is not significantly altered by the introduction of measures of college quality. Interlocking chains of educational opportunity do not appear, in this instance, to have much impact upon attainment either among professional or business-managerial occupations.

Institutional Sponsorship as Latent Capacity

Though the analysis does support the contention that college origins do influence status attainment, at least among professional occupations, it does not lend unambiguous support to the contention that social mobility through higher education is primarily of the social sponsorship type. As first described by Turner (1960) and as employed by Porter (1974) in a study of Black and White patterns of educational and early occupational attainment, sponsorship mobility implies the active sponsoring to elite positions by existing occupational elites of persons selected mainly on the basis of social attributes (Collins, 1971). In the educational system, particular institutions may serve as legitimating sponsoring agencies for those elites by screening, socializing, and promoting selected individuals as future incumbents of elite occupation positions (Turner, 1960; Collins, 1971; Kamens, 1974).

In the present analysis, even though college origins did matter, it is clear that persons in professional occupations are no more elite in social backgrounds than are those in business-managerial occupations (see Table IV-1). Nor do they appear to attend colleges which are, on the average, of any greater academic quality than do persons in business-managerial fields. They do, however, appear to have achieved higher grade point averages in college, held higher occupational expectations during college, and completed post-collegiate degrees in greater frequency than did the latter group. And though where they went to college did impact upon subsequent attainments within the professions, for instance in level of entry to the occupation, so did their performance in those colleges (Table IV-3 and Figure IV-1). Indeed the sum of the sum of the effects of performance-related behaviors (i.e., grade point average, occupational expectations, and graduate degrees) exceeded those due to college origins.

Sponsorship, should it occur, does not appear then to apply equally well to all persons who gain entrance to high quality colleges. Rather it seems to be applicable primarily to those individuals whose performance and behavior warrent future sponsorship. In this sense, the data suggest that sponsorship is largely a latent capacity of institutions which can be activated by able and ambitious persons within the institution. The individual rather than the institution appears to be the primary causal force in the process of attainment described in these analyses. Simply being at a high quality institution is no guarantee of being sponsored to elite occupational positions.

Sponsorship, should it occur, also does not appear to be uniformly effective or applicable for attainment in differing occupations and/or occupational situses. In the present analysis, it is among professional occupations rather than among business-managerial ones that institutional sponsorship seems to occur. Given the overlap in the activity structures which characterize performance within the professions and those which may occur within collegiate institutions, it is likely that the effect of college origins upon attainment is as much due to differential standards of academic training as it is a result of social networking between members of occupations and educational institutions. Were it otherwise, one would have expected college origins to have impacted upon attainment among business-managerial occupations as well (see White, 1970).

Implied then is a conception of educational stratification which falls somewhere in between the more strictly Marxist and/or conflict perspectives of Bowles and Gintis

(1976) and Collins (1971) and that of Jencks et al. (1972) which posits a great deal of coincidence or "luck" in social attainment. While the latter position may prove, upon subsequent study, to apply to attainment among business-managerial occupations, among professional ones it appears to be the case that both individual initiative and institutional location matter. Even though one must be able to demonstrate competence, it helps to do so in those institutions which have the capacity to sponsor its graduates into the more prestigious positions within the occupation. While some may seek to redefine this phenomena as "being at the right place at the right time," it is evident from our analysis that being able to be at the right place (i.e., a high quality college) is not a socially random phenomena. Access to those institutions is, from these data, a function of both social origins and type of high school attended.

CHAPTER FIVE

SOCIAL PATTERNS OF EDUCATIONAL SPONSORSHIP TO WORK: DIFFERENTIAL MODES OF ATTAINMENT THROUGH SCHOOLING TO PROFESSIONAL WORK

Introduction

We now turn our attention to the variable impact of college origins upon the early occupational attainment of differing social groups. Specifically, we will ask to what degree and in what manner do college origins (quality) influence the early occupational careers of college graduates of different social status backgrounds? To what degree are those influences mediated by quality of graduate school attended, if any, and by the level of entry into the occupational world (first job status)? To what degree are those effects direct, unmediated by intervening experiences?

In this instance, rather than explore both the professional and business-managerial occupations, we will focus our attention only on the former occupations. As demonstrated in the preceding chapter, there is very little evidence to suggest that attainment in the business-managerial occupations is in any substantial way related to the quality of college one attends. In any event, Appendix D does present in tabular form the results of analysis for those occupations.

The Variable Impact of College Origins upon Attainment Among Professional Occupations

Univariate Statistics

The means and standard deviations for each group of college graduates is given in Table V-1. Understandably, persons of higher status origins had parents who were themselves more highly educated. But among those of highest status origins do we observe fathers to have higher mean education than mothers (6.54 and 5.79)? For other groups, the reverse is the case.

Despite differences in parental educational attainment levels, the groups did not differ appreciably in the type of high school attended. In each case nearly 20 percent of the members of each status group went to a private as opposed to a public high school. Though persons of high status origins went on to private schools somewhat more frequently than did other groups (23 percent as compared to 18 and 17 percent), differences were not very large especially when compared to differences in parental backgrounds.

TABLE V - 1

Means and Standard Deviations in a Model of Social Sponsorship among Professional Occupations
1961 Male College Graduates: By Social Status Origins*
(standard deviation in parenthesis)

Variable	Social Status Origins		
	Low Status (N=962)	Middle Status (N=903)	High Status (N=728)
FED - Father's education	4.04 (1.13)	5.09 (1.47)	6.54 (1.35)
MED - Mother's education	4.46 (1.17)	5.12 (1.24)	5.79 (1.22)
HSTYP - High school type	0.18 (0.38)	0.17 (0.37)	0.23 (0.42)
COLQA - College quality	52.30 (8.70)	56.11 (9.27)	59.32 (8.88)
GPA - Grade point average	6.05 (1.46)	6.03 (1.57)	6.15 (1.58)
XOC61N - Senior occup. expt.	64.13 (8.99)	65.42 (10.03)	67.01 (10.75)
HDEG - Graduate degree	0.45 (0.50)	0.55 (0.50)	0.62 (0.48)
FJOBN - First job status	59.57 (13.95)	61.51 (12.73)	64.46 (12.35)
POC68N - 1968 occup. prestige	61.97 (9.31)	63.28 (10.68)	65.48 (10.40)

Where: High school type .... 0=public, 1=private
Graduate degree .... 0=none, 1=any advanced degree
Social status origins .... Determined by father's socioeconomic status as follows:
low = 0- 33
middle = 34- 66
high = 67- 98

The same is not true with regard to college quality. The higher the social status background, the higher the average academic quality of the colleges attended by individuals in the respective groups (52.30, 56.11 and 59.32, respectively). Given differences in social status origins, differences in quality of college attended are entirely expected (Karabel and Astin, 1975). Nevertheless, as the range in quality of institutions attended were approximately the same, ranging from 8.70 to 9.27, there is little evidence here to support any 'overt' channeling of high status persons to a small select group of colleges. Otherwise, one would have expected the range of colleges attended among high status individuals to be significantly smaller than for other groups.

Though measures of native ability are not available in these data, the comparability of college grade point averages (standard deviations) suggests a similar comparability in the aptitude of the college graduates of different social status origins. While performance is always influenced by motivation and the context within which it occurs (e.g., the average aptitude of other students), the data here do not suggest significant differences in average group competence. Yet they do point up substantial differences in the level of occupational expectations held by each group in their senior year in college (64.13, 65.42 and 67.01, respectively). Whether such differences reflect variations in social origins or mirror the possible socializing impact of having attended different quality colleges, which tend to be populated by persons who are themselves likely to experience different levels of occasional success, is at this point in the analysis unclear. What is clear, however, is the more limited range of expectations held by college graduates of low status origins (8.99) relative to those held by persons of middle and high status backgrounds (10.03 and 10.75).

Differences in senior year occupational expectations do mirror substantial differences in subsequent educational and occupational attainments among the differing groups. Persons of higher status origins were more persistent in the completion of graduate degrees (62, 55 and 45 percent for high, middle and low status groups, respectively) and more successful both initially and in 1968 in their post-collegiate occupational prestige attainment among professional occupations (64.46, 61.51 and 59.57; and 65.48, 63.28 and 61.97, respectively). Yet given the initial advantage in occupational attainment of high status college graduates, they show smaller average gains in status after first job than do graduates of middle and low status origins. Among the latter group, for instance, the average difference between first job and 1968 job status is 2.40 prestige points. Among high and middle status graduates that difference is but 1.02 and 1.77 prestige points, respectively. Relative to graduates of high status then, persons of low status origins are seen to have reduced the gap in status attainment from 4.89 at first job to 3.51 in 1968. Whether this is due to the fact that a greater portion of low status graduates are in the job market for a longer time (since fewer receive graduate degrees) or that they perform better after job entry is here undetermined. Nonetheless, it is apparent that much of the early occupational advantage experienced by high status college graduates is in part due to their higher level of entry into the job market after the completion of college.

For all groups, the movement from first job to 1968 occupation involves a reduction in the range of occupations held (i.e., standard deviations in occupational prestige decline between first job and job in 1968). Interestingly that reduction in range is greatest for low status graduates (13.95 to 9.31). So much so that they move from having held first jobs with the greatest variation in prestige (13.95 as compared to 12.73 and 12.35) to holding occupations in 1968 with the least variation (9.31 as compared to 10.68 and 10.40). Since this is also the case for occupational expectations held seven years earlier, it is unclear to what degree such restriction in range of occupational achievements after entry mirrors constrained opportunities after entry, the impact of differential work experience, or the narrower expectational outlook they held during college. Certainly, there is little overt evidence here to suggest the possible channeling of low status persons into a more limited set of opportunities after college graduation. Differences in expectations alone could account for the observed differences in subsequent attainments.

The movement of different groups between first job and 1968 job is described in greater detail in Table V-2. As can be seen in those frequency distribution, much of the upward mobility of persons between first and 1968 job occurs in the upper-middle range of occupational prestige; specifically in the 71-80 prestige score range. For persons of lower status, however, some movement also occurs between lower prestige jobs (31-40) and those of lower-middle prestige (41-50). In this respect the movement of lower status graduates in the occupational market shows a degree of bifurcation between high and low segments of the market which is not apparent among other groups.

Nevertheless, for all groups, it is apparent that much of their early occupational careers are carried out in the middle and upper-middle sectors of the occupational hierarchy. What tends to distinguish the careers of persons of different

TABLE V - 2

Frequency Distribution of First Job and 1968 Occupation Prestige Among Professional Occupations of 1961 Male College Graduates by Social Status Origins *

	Social Status Origins					
	Low Status (N=962)		Middle Status (N=903)		High Status (N=728)	
Prestige Score	FJOBN	POC68N	FJOBN	POC68N	FJOBN	POC68N
1 - 30	0.3	0.3	0.7	0.3	0.1	0.0
31 - 40	2.4	0.8	2.1	1.4	1.0	0.2
41 - 50	6.3	8.3	6.7	6.3	6.8	5.8
51 - 60	47.8	46.0	40.7	40.0	35.5	34.1
61 - 70	29.2	30.5	29.6	26.8	25.1	26.7
71 - 80	9.9	12.5	14.7	19.9	24.5	26.6
81 - 98	1.6	1.8	3.9	4.2	6.2	6.5
Means	59.6	62.0	61.5	63.3	64.5	65.5
(Standard Dev.)	(14.0)	(9.3)	(12.7)	(10.7)	(12.4)	(10.4)

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* Persons not working or missing are not included in the above frequency distributions.

status backgrounds, especially those of high and low status origins, is the varying frequencies with which persons enter the higher sectors of the occupation (71-98). Among persons of high status origins, 30.7 percent enter higher status positions at entry, while only 11.5 percent do so among persons of low status origins. Differential level of entry to the occupational structure appears, at this point, to be a central difference in their occupational careers.

To summarize, college graduates of higher status origins tended to attend colleges of higher average academic quality and hold therein higher expectations of their own occupational futures than did other persons despite comparability in grade point averages earned while in those colleges. Differences in expectations, both in level and range, were reflective of similar differences in subsequent educational and occupational attainments after college. College graduates of higher status backgrounds did better, both educationally and occupationally, than did graduates of middle and low status, at least among those who entered professional occupations after college.

Longitudinal Path Analysis of Occupational Attainment

Differences in the attainment processes of the three groups are shown by the unstandardized and standardized coefficients given in Table V-4 and depicted in Figures V-1--V-3. Correlation coefficients for these models are seen in Table V-3.

TABLE V - 3A

Correlation Coefficients for Variables in a Model of Social Sponsorship to Work Among Professional Occupations of 1961 Male College Graduates: Low Status Origins*

(N = 962)

Variables	FED	MED	HSTYP	COLQA	GPA	XOC61N	HDEG	FJOBN	POC68N
FED - Father's education	1.000	.505	.051	.068	.015	.053	.101	.013	.036
MED - Mother's education		1.000	.056	.116	.009	.051	.119	-.006	.011
HSTYP - High school type			1.000	.162	.115	.105	.012	.085	.037
COLQA - College quality				1.000	.074	.163	.077	.186	.227
GPA - Grade point average					1.000	.315	.258	.150	.162
XOC61N - Senior occup. expt.						1.000	.198	.370	.434
HDEG - Graduate degree							1.000	.216	.303
FJOBN - First job status								1.000	.448
POC68N - 1968 occup. prestige									1.000

Where ; Social status origin is determined by father's socioeconomic status as follows:

low = 0 - 33
middle = 34 - 66
high = 67 - 98

TABLE V -3B

Correlation Coefficients for Variables in a Model of Social Sponsorship to Work Among Professional Occupations of 1961 Male College Graduates: Middle Status Origins*

(N = 903)

Variables	FED	MED	HSTYP	COLQA	GPA	XOC61N	HDEG	FJOBN	POC68N
FED - Father's education	1.000	.583	.002	.141	.135	.120	.132	.059	.118
MED - Mother's education		1.000	.073	.145	.084	.081	.107	.051	.130
HSTYP - High school type			1.000	.163	-.031	.068	.089	.078	.073
COLQA - College quality				1.000	.108	.161	.158	.217	.209
GPA - Grade point average					1.000	.296	.359	.257	.275
XOC61N - Senior occup. expt.						1.000	.302	.336	.419
HDEG - Graduate degree							1.000	.235	.378
FJOBN - First job status								1.000	.549
POC68N - 1968 occup. prestige									1.000

* Where: Social status origin is determined by father's socioeconomic status as follows:

low - 0 - 33
middle - 34 - 66
high - 67 - 98

TABLE V - 3C

Correlation Coefficients for Variables in a Model of Social Sponsorship to Work Among Professional Occupations of 1961 Male College Graduates: High Status Origins*

(N = 728)

Variables	FED	MED	HSTYP	COLQA	GPA	XOC61N	HDEG	FJOBN	POC68N
FED - Father's education	1.000	.512	.122	.273	.149	.176	.180	.127	.235
MED - Mother's education		1.000	.020	.258	.132	.169	.204	.140	.218
HSTYP - High school type			1.000	.270	.020	.056	.098	.089	.078
COLQA - College quality				1.000	.145	.164	.255	.143	.165
GPA - Grade point average					1.000	.352	.400	.272	.345
XOC61N - Senior occup. expt.						1.000	.409	.450	.490
HDEG - Graduate degree							1.000	.279	.401
FJOBN - First job status								1.000	.691
POC68N - 1968 occup. prestige									1.000

* Where: Social status origin is determined by father's socioeconomic status as follows:

low = 0 - 33
middle = 34 - 66
high = 67 - 98

TABLE V - 4

Coefficients in a Model of Social Sponsorship to Work Among Professional Occupations Of 1961 Male College Graduates By Social Status Origins [1]

(standardized coefficients)

Regressor	College Quality	Grade Point Average	Senior Occup. Expectations	Graduate Degree	1968 Occup. Prestige
			Low Status Origins (N = 962)		
FED - Father's education	.018	.016	.033	.045	.013
MED - Mother's education	.116*	.001	.020	.081	-.062
HSTYP - High school type	.170*	.107*	.053	-.049	-.026
COLQA - College quality		.055	.128*	.036	.161*
GPA - Grade point average			.299*	.221*	-.023
XOC61N - Senior occup. expt.				.122*	.375*
HDEG - Graduate degree					.228*
Constant	51.041	5.806	45.428	-.827	28.250
Coefficient of Determination	.043	.017	.123	.099	.263

TABLE V - 4 cont.

	Middle Status Origins (N = 903)				
FED - Father's education	.074	.125*	.044	.037	-.010
MED - Mother's education	.114*	-.007	.020	.041	.065
HSTYP - High school type	.171*	-.048	.060	.076*	.023
COLQA - College quality		.100*	.111*	.073*	.103*
GPA - Grade point average			.278*	.288*	.089*
XOC61N - Senior occup. expt.				.192*	.301*
HDEG - Graduate degree					.231*
Constant	52.896	4.273	46.850	-.903	27.447
Coefficient of Determination	.055	.029	.111	.189	.268

TABLE V -4 cont.

High Status Origins (N = 728)

FED - Father's education	.153*	.092	.068	.007	.090*
MED - Mother's education	.175*	.057	.072	.082	.061
HSTYP - High school type	.249*	.023	.020	.037	.028
COLQA - College quality		.112*	.075*	.137*	-.003
GPA - Grade point average			.321*	.272*	.131*
XOC61N - Senior occup. expt.				.274*	.345*
HDEG - Graduate degree					.176*
Constant	49.457	3.775	41.372	-1.332	28.629
Coefficient of Determination	.154	.037	.151	.277	.321

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[1] Social status origins determined as in Tables VI- 1 and VI- 2.

* Indicates coefficient whose $p > .01$ and whose metric coefficient is at least twice as large as its standard error.

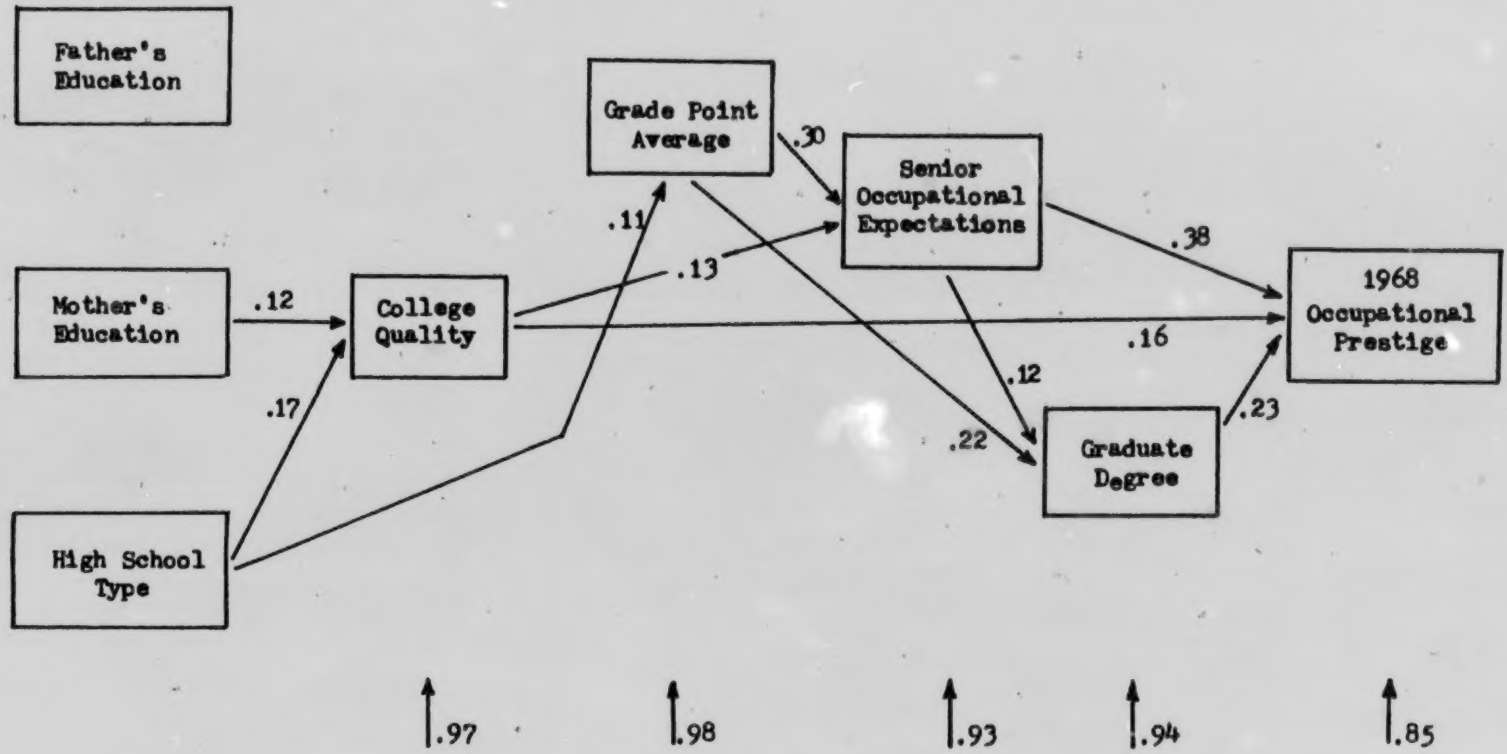
Father's Education
Mother's Education
High School Type
College Quality
Grade Point Average
Senior Occupational Expectations
Graduate Degree
1968 Occupational Prestige
.12
.17
.11
.13
.30
.38
.16
.12
.22
.23
.97
.98
.93
.94
.85

Figure V - 1: Path Diagram for a Model of Social Sponsorship to Work Among Professional Occupations of 1961 Male College Graduates of Low Social Status Origins.*

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* Only standardized coefficients are shown whose p >.01 and whose metric coefficient is at least twice as large as its standard error.

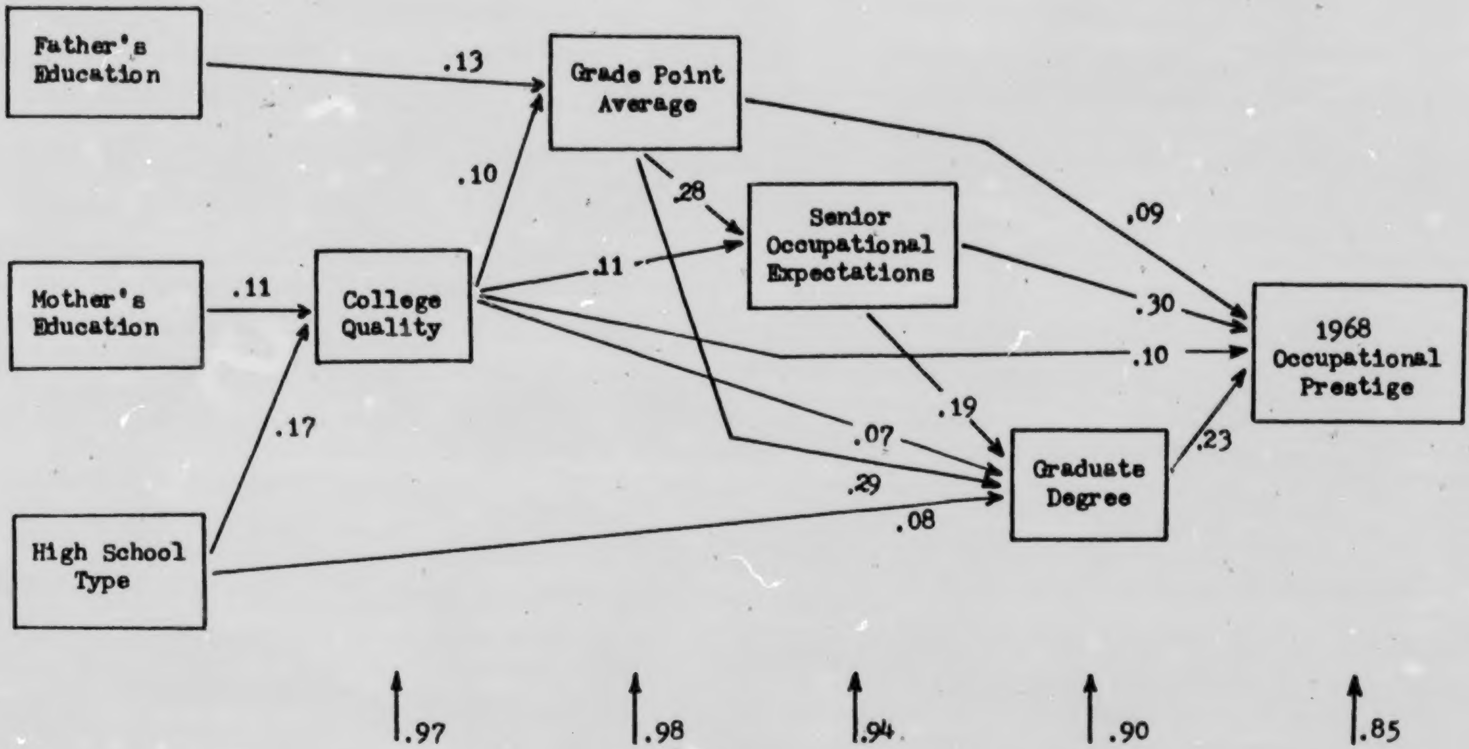
Father's Education
Mother's Education
High School Type
College Quality
Grade Point Average
Senior Occupational Expectations
Graduate Degree
1968 Occupational Prestige
.13
.10
.11
.17
.28
.11
.09
.30
.10
.19
.07
.29
.08
.23
.97
.98
.94
.90
.85

Figure V -2: Path Diagram for a Model of Social Sponsorship to Work Among Professional Occupations of 1961 Male College Graduates of Middle Social Status Origins*

*Only standardized coefficients are shown whose p >.01 and whose metric coefficient is at least twice as large as its standard error.

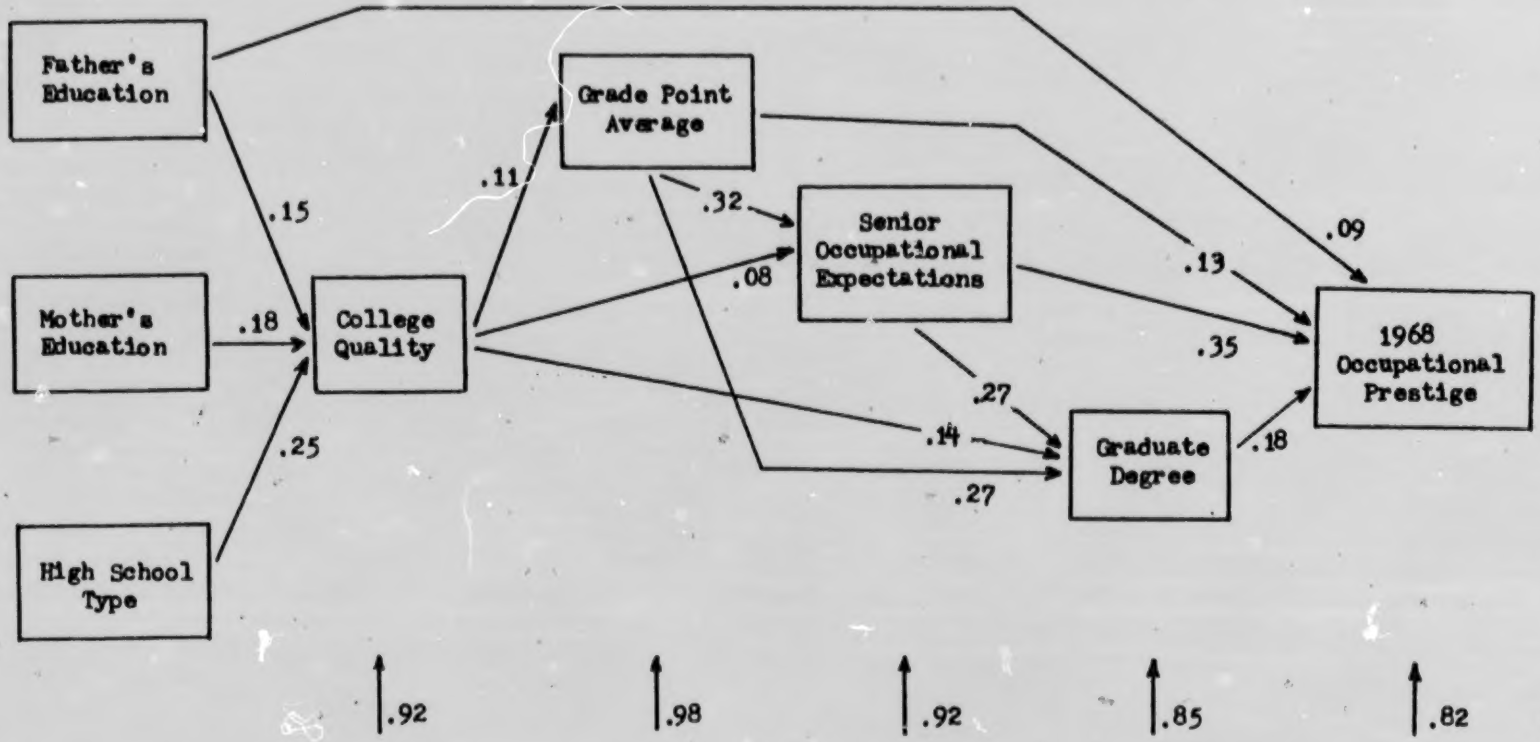
Father's Education
Mother's Education
High School Type
College Quality
Grade Point Average
Senior Occupational Expectations
Graduate Degree
1968 Occupational Prestige
.15
.18
.25
.11
.32
.08
.13
.09
.35
.27
.14
.27
.18
.92
.98
.92
.85
.82

Figure V - 3: Path Diagram for a Model of Social Sponsorship to Work Among Professional Occupations of 1961 Male College Graduates of High Social Status Origins*

*Only standardized coefficients are shown whose $p > .01$ and whose metric coefficient is at least twice as large as its standard error.

In all following discussions we will most often refer to the standardized path coefficients as they permit us to speak to the relative effect, within groups, of different variables upon occupational prestige attainment within professional occupations.

The first column in those tables treats college quality as determined by three exogenous variables (father's education, mother's education and type of high school attended). In each group, the quality of college attended was influenced both by parental educational level and by the type of high school attended prior to college entry. For both low and middle status groups, only mother's educational level impacted upon college quality (0.12 and 0.11, respectively), whereas for persons of high status backgrounds, both mother's and father's education (0.15 and 0.18) influenced the quality of college attended. For all groups, however, having attended a private as opposed to a public high school had the greatest single impact upon college quality. Attendance at a private high school produced unstandardized (standardized) changes in the quality of college attended of 3.30, 3.92 and 4.99 (0.17, 0.17 and 0.25), respectively. Since there is little overt evidence of significant differences in native intelligence of students in private and public high schools, such effects imply the existence of important institutional linkages between particular types of secondary schools and attendance at the more prestigious colleges in the United States (for instance, see Karabel and Astin, 1975, Griffin and Alexander, 1978). The intriguing possibility is raised here that such linkages may be more important among persons from high status origins than among other college graduates. Going to a private high school matters for all groups. But it appears to matter more among those persons from high status families than it does for other less advantaged groups. Nevertheless, it must be pointed out that in no case was college quality highly determined by the models utilized here. At best, among high status persons, the variance in college quality accounted for was no more than 16.4 percent. Though high school-college linkages may be significant, they are by no means highly determinate of the college one enters, at least among this sample of college graduates.

Given the absence of exogenous measures of native intelligence it is, in some respects, not surprising that the analysis does little to explain grade point average in college. Less than 4 percent of the variance in performance was accounted for by the inclusion of social background, high school type and college quality. As the data deal only with college graduates, much of possible impact of background attributes, individual abilities, and college quality are eliminated from the analysis; that is, it is taken up in the attrition between college entrance and graduation, a process which normally results in a 50 percent dropout rate. Thus, one need be cautious in assigning meaning to the significant path coefficients which appear in the equations for different groups, even those coefficients are those one would expect in such analyses.

The determination of senior occupational expectations is similar for each of the three status groups. In all cases, both college quality and grade point average impact upon the level of one's occupational expectations held in the senior year of college in nearly the same fashion and in the same relative fashion. Grade point average has, in each case, between two and three times as great an impact upon expectations as did the quality of college attended (standardized coefficients of 0.30, 0.28 and 0.32 as compared to 0.13, 0.11 and 0.08, respectively). That college performance is the single best predictor of expectations is not surprising. That there remains, in each case, a direct effect of college quality upon expectations, though not surprising, is nevertheless of particular interest here. Specifically it may point up the occurrence of institutional patterns of socialization which cut across social groups and which lead, independently, to higher expectations as to one's own future attainments. Since these impacts occur for all social groups, low as well as high status, one is again confronted with evidence which speaks contrary to the revisionist view that colleges differentially promote and/or impact favorably upon the children of the advantaged over those of less advantaged backgrounds. Of course, as we are dealing only with college graduates and only those who enter professional fields of endeavor, one need be careful in extending this argument too far. Nevertheless, as college seniors do represent a significant portion of the supply of highly trained labor and are, in fact, the largest single source of trained manpower for professional work, these results are not without meaning. In entering the professional sector of the labor market, there is little evidence here that different social groups have been differentially socialized, at least as regards expectations, in their college years.

The completion of subsequent graduate level degrees was for each group significantly affected both by one's performance in college (0.22, 0.29 and 0.27) and by the level of occupational expectations held in the senior year of college (0.12, 0.19 and 0.27, respectively). Clearly, the higher one's performance in prior schooling and the greater one's expectations regarding future occupational attainments, the more likely are persons, within each group, to obtain a post-collegiate degree prior to 1968. Presumably, this reflects both the differential aptitude of persons for higher level academic work and the likely requirement, within professional fields, that positions of higher prestige call for the possession of graduate level degrees. Recalling that a greater proportion of middle and high status persons obtained higher degrees, it is noteworthy that for those persons, but not for graduates of lower status, the completion of graduate degrees was also influenced directly by the quality of college attended. Whether this is due to a masked motivational effect (e.g., that persons of middle and high status who attend low quality colleges are much less motivated than those who attend higher quality institutions) or to a unique effect of college origins upon subsequent educational achievements among different social groups is here undeterminable. Whatever its roots, it is evident that differences in college quality among persons of high status origins have greater impact upon the completion of advanced degrees among those of middle (and obviously low) status origins. At the same time, the process of graduate degree completion so described is much more determined by the model employed among high status persons (27.7 percent of variance explained) than it is among middle and low status persons (18.9 and 9.9 percent, respectively). The lone effect of high school type among middle status persons, though significant here, may be spurious in nature. Following analysis of interaction effects indicates that for middle status graduates our model may not have entirely captured the varied impact of high school origins upon subsequent behaviors.

Finally, as to the prestige of the occupation (professional) held in 1968, it is evident that there are substantial differences in both form and substance in the processes of status attainment which characterize the three groups of college graduates. Among individuals of low status origins, occupational expectations, the possession of a graduate degree and college quality, in that order, directly impacted upon the prestige of the professional occupation held in 1968, seven years after college graduation (0.38, 0.23 and 0.16, respectively). Among persons of middle status backgrounds, the same situation applies but with the added impact of grade point average (0.30, 0.23, 0.10 and 0.09, respectively). For high status graduates, however, differences in quality of college attended did not directly affect subsequent occupational attainments. Rather there appears, together with expectations (0.35), graduate degrees (0.18), and grade point average (0.13), a direct effect of father's educational level (0.09) upon the prestige of the professional occupation held in 1968.

Recall that persons of high status backgrounds had attended colleges which were of higher average academic quality and had achieved thereafter professional positions of higher prestige than did other college graduates, most noticeably those of low status origins. Yet their academic grade point performance in those colleges was no different than those of other groups. In contrast to the attainment process among low status individuals, it was grade point average not differences in academic quality which impacted upon prestige attainment seven years after college graduation. The process of attainment among middle status persons was, in this regard, intermediate in character in that both college origins and grade point average directly influenced subsequent occupational attainments within the professional domain of work. And though it is evident, by definition, that parents of high status persons are more highly educated as a group than are other parents of college graduates, it is only among the former group that differences in parental educational levels, specifically among fathers, had a significant direct effect upon attainment even after taking account of its intermediate effects via educational attainment.

Impact of Graduate School Quality Upon Attainment

Two additional steps were carried out in the analysis. First, a set of dummy variables was constructed to assess the effect of the quality of one's graduate school upon 1968 occupational prestige attainment (Table V-5). The dummy variable set consisted of four dummies: one representing no graduate

TABLE V - 5

Effects of College and Graduate School Origins and of First Job Status upon Occupational Prestige Attainment among Professional Occupations of 1961 Male College Graduates By Social Status Origins *

(standardized coefficients)

	Social Status Origins								
Regressor	Low Status (N =962)			Middle Status (N = 903)			High Status (N = 728)		
FED	.013	.013	.012	-.010	-.012	-.003	.090*	.087*	.087*
MED	-.062	-.065	-.049	.065	.060	.060	.061	.063	.040
HSTYP	-.026	-.030	-.037	.023	.025	.009	.028	.030	.001
COLQA	.161*	.147*	.117*	.103*	.086*	.033	-.003	-.001	-.012
GPA	-.023	-.032	-.029	.089*	.077*	.023	.131*	.128*	.072*
XOC61N	.375*	.370*	.280*	.301*	.293*	.196*	.345*	.348*	.141*
HDEG	.228*	....	....	.231*	....	....	.176*	....	....
GRADQ0	....	-.199*	-.169*	....	-.203*	-.181*	....	-.157*	-.125*
GRADQM	....	.033	.016	....	.007	-.002	....	.049	.045
GRADQH	....	.058	.040	....	.091*	.055	....	-.004	-.015
FJOBN	....	....	.284*	....	....	.411*	....	....	.557*
Constant	28.250	33.400	28.757	27.447	34.181	24.534	28.629	31.855	18.559
Coefficient of Determination	.263	.266	.332	.268	.274	.414	.321	.323	.562

* Indicates significant coefficient at the $p > .01$ level and where the metric coefficient is at least twice as large as the standard error.

where: GRADQ0 = no graduate degree
GRADQL = graduate degree from low quality institution (omitted dummy)
GRADQM = graduate degree from middle quality institution
GRADQH = graduate degree from high quality institution.

degree (GRADQ0) and three representing attendance at graduate institutions of low, middle and high quality (GRADQ1, GRADQ2, and GRADQ3, respectively). In all analysis, the omitted dummy was having received a degree from a graduate school of low quality (GRADQ1). Thus all coefficients on GRADQ represent differences in occupational prestige attainment between those who attended a low quality institution and those in the category of interest. Such a construction also enabled us to determine to what degree, if at all, any of the effect of college origins upon attainment was transmitted via the quality of graduate school attended. Among professional occupations, in particular, it is frequently assumed that graduate school origins rather than college origins are instrumental in occupational attainment.

Yet in our analysis very little of the total effect of college origins upon occupational prestige attainment was transmitted through graduate school quality. Given the completion of an advanced degree, the addition of measures of graduate school origins does little to mediate the impact of college origins upon 1968 prestige attainment (compare the first two columns in each status category). For persons of low and middle status origins the inclusion of graduate school quality reduces the effect of college origins by only 0.014 and 0.017, respectively. Only among the latter graduates does attendance at high quality graduate institutions provide for a significant, though minor, occupational advantage (relative to attendance at a low quality institution). Nevertheless, for that and other groups, the addition of graduate school origins does not alter the significance of college origins or of other variables in predicting 1968 occupational prestige. Nor did it substantially increase the explanation of variance in attainments over that provided by an equation employing the simple completion of an advanced degree. Demonstrably, it was the completion of an advanced degree, more than its origins, that impacted significantly upon occupational prestige attainment in the professional fields of work.

College Origins and Entry to Work

Next, a set of multivariate regression equations were run on 1968 occupational attainment which included both graduate school quality and the prestige of the first job entered after college (the third column of each category of social status in Table V-3). Comparison of the resulting equations permits us to determine to what degree the effects of college origins and of other variables upon professional occupational attainment are mediated by their impact upon level of entry into the labor market. Presumably, a high degree of mediation would suggest that the primary impact of college origins lies in its "port of entry" effect; that is, in its ability to sponsor graduates to high level entry positions which provide differential opportunities for future mobility after entry. As to that analysis, it is clear that first job status is for all groups the primary determinant of 1968 job status. Yet its relative importance within status groups is variable as is its mediation of the effect of exogenous and process variables upon 1968 occupational prestige. Among college graduates of low status, the addition of first job status does relatively little to mediate the impacts of college origins, senior expectations, and the completion of a graduate degree upon attainment; each remaining significant after the inclusion of first job status. However, among persons of middle status origins, knowledge of one's first job eliminates the significance of both college and graduate school origins and of grade point average upon subsequent attainments. For that group, at least, differences in college and graduate school origins and in grades earned in college have no significant impact upon attainment after initial job entry. For persons of high status backgrounds, the addition of first job status measurably improves the explanation of variance of 1968 occupation (32.3 to 56.2 percent) and noticeably reduces the impact of process variables (for instance, the effect of expectations is reduced from 0.348 to 0.141). Yet in no instance does knowledge of first job eliminate the significance of those variables (parental education, grade point average, senior expectations and graduate degrees) in predicting occupational attainment after job entry. Whether this is due to an underlying structural difference in processes of attainment which characterize different social groups or merely reflects their differing amounts of work experience is here undeterminable. Limited tests of work experience effects indicated, however, that differences in experience were not large enough to account for the substantial differences in the resulting models of attainment which characterize the different social groups.

It is not possible to speak here either of the differential effect of first job status upon attainment or of the mediation of first job of graduate degrees. In the first instance, since differing groups have had differing amounts of work experiences (an inverse function of the proportion obtaining graduate degrees), the apparent relative effect of first job may as much reflect that difference as it may the varying structure of attainment processes. The closer first job is, in time, to 1968 job the more likely are they to be highly correlated independent of structural effects. In the second instance, it is not possible to speak of mediation in the time sequential sense since a large proportion of persons obtained their graduate degree after, not before, entering the labor market. As a result, there is no definitive time sequence relating the earning of a graduate degree and initial entry into professional work.

Disaggregation of Effects of College Origins

Differences in processes of attainment between these models are further highlighted by the disaggregation of total effects into their direct and indirect component parts (Table V-6). As to the impact of college origins, it is evident that much of its total impact upon attainment among graduates of low status origins is direct in nature (54.8 percent of the total effect is unmediated by intervening variables). Among persons of middle status backgrounds this is not the case. The largest portion of its total effect is transmitted indirectly via the status of first job (32.8 percent of total effect). Among high status graduates college origins have no effect whatsoever upon occupational attainment. For all groups, the largest portion of the total effect of grade performance is transmitted via its effect upon senior year expectations (81.1, 38.2 and 41.3 percent, respectively). But only among persons of high status does there reamin a significant direct effect of grade performance in college upon subsequent attainment (0.073 or 25.6 percent of its total effect). Of the effects of senior year expectations, there are for all groups significant effects both indirectly via first job status and directly given first job entry. The proportion of total effect which is direct varies, however, among groups. It is highest among persons of lowest status

TABLE V - 6

Disaggregation of Total Effects Into Direct and Indirect Effects of Background and Process Variables on 1968 Occupational Prestige Attainment Among Professional Occupations Of 1961 Male College Graduates By Social Status*

(standardised coefficients)

Predetermined Variables	Total Effects	Indirect Effects						Direct Effect
		COLQA	GPA	XOC61N	HDEG	GRADQA	FJOBN	
				Low Status Origins (N=962)				
FED	.043	.004	.002	.013	.010	.009	.001	.013
MED	-.009	.026	.001	.008	.019	.019	-.015	-.047
HSTYP	.039	.039	.016	.002	-.011	-.011	.008	.035
COLQA	.228*	....	.008	.052	.008	.022	.035	.125*
GPA	.148*	....	....	.120*	.050	.060	-.001	-.022
XOC61N	.403*	....	....	....	.028	.032	.091*	.283*
HDEG	.228*	....	....	....	....	....	.043	.185
FJOBN	.286*	....	....	....	....	....	....	.286*

TABLE V - 6 cont.

Middle Status Origins (N=903)

FED	.099	.014	.031	.015	.009	.011	-.009	-.001
MED	.101*	.021	-.002	.007	.009	.015	.001	.064
HSTYP	.080*	.031	-.012	.021	.017	.016	.014	.008
COLQA	.183*	....	.025	.038	.017	.034	.060	.042
GPA	.251*	....	....	.096*	.067*	.078*	.059	.030
XOC61N	.345*	....	....	....	.044	.046	.101*	.200*
HDEG	.231*	....	....	....	....	....	.035	.195*
FJOBN	.414*	....	....	....	....	....	....	.414*

TABLE V - 6 cont.

High Status Origins (N= 728)

FED	.159*	.013	.028	.027	.001	.004	-.001	.090*
MED	.136*	.015	.017	.028	.014	.012	.024	.037
HSTYP	.056	.021	-.007	.008	.006	.004	.029	-.001
COLQA	.085	....	.034	.029	.024	.023	.014	-.017
GPA	.305*	....	....	.126*	.048	.051	.058	.073*
XOC61N	.393*	....	....	....	.048	.045	.207*	.137*
HDEG	.176*	....	....	....	....	....	.036	.141*
FJOBN	.556*	....	....	....	....	....	....	.556*

Where social status origins is determined as in Tables VI-1 and VI-2.

* Indicates a significant effect where $p > .01$.

origins (70.2 percent) and lowest among persons of high status backgrounds (34.9 percent). As noted earlier, diminishment of the effect of graduate degrees via first job cannot be interpreted as mediation in the time-sequential sense. A large portion of college graduates obtained their degree after, not before, entering the labor market.

Interaction Effects

The analysis also entailed the development of a set of multiplicative terms estimating the interaction between high school type and father's occupational type (i.e., whether he held a professional occupation) with each of the independent variables (not shown). Since each is a categorical variable, the coefficients for the interaction terms are equal to the difference between the coefficients for persons from private and public high schools and from families whose fathers did or did not hold professional occupations, respectively. Presence of interaction may then suggest that important differences exist, for instance, between persons from private and public high schools which are not adequately accounted for in the current models.

Results of interaction tests yielded several interesting findings. First, though one might have expected interaction effects associated with father's occupation type (for example, attributable to differential family socialization to work), none appeared for either low, middle or high status groups. Second, interaction effects associated with high school type did appear in the analysis. They did so, however, not for high status college graduates but for persons of low and middle status. Among the former, interaction between high school type and senior occupational expectations appeared; while for the latter, significant interactions occurred for grade point average, senior occupational expectations and the completion of graduate degrees. In each instance, the interaction suggested an advantage associated with private as compared to public high school attendance. For the latter group then, more so than for persons of low status origins, it was apparent that our model did not entirely capture the impact of type of high school attended upon subsequent educational behaviors. In any event, since the addition of multiple interaction terms added but one percent to the explanation of variance in 1968 occupational attainments, there was no reason to believe that failure to encapture more of its impact was a serious flaw in the analysis.

Discussion

We began this chapter by referring to recent research which suggests that college origins have little, if any, impact upon the status attainment process. It was noted that much of this research has assumed what is essentially a classical human capital theory approach to the study of education and occupational attainment. That is, that the labor market is largely undifferentiated as regards the interplay between the supply and demand for trained labor. In contrast, we argued that accumulating evidence supports the view that there are significant forms of segmentation in the labor market both in the supply (individuals) and demand (occupations) for labor. As such, the study of the impact of education generally and of college origins in particular upon the process of status attainment is more correctly approached through an analysis of attainment in specific occupations and/or occupational segments rather than among occupations generally (Tinto, 1980).

In the present instance, attention focused upon patterns of occupational attainment of a national sample of male college seniors who entered professional occupations after the completion of their education. Data were drawn from the NORC data files on the occupational and educational attainments of a national sample of 1961 college seniors followed over a seven year period after college graduation. A separate path analysis was performed for each of three groups of college graduates as determined by the social status of their families. The analysis attempted, then, to assess to what degree, if at all, patterns of educational sponsorship varied among persons of differing social origins and whether those patterns were influenced by academic performance and/or educational origins. The results of those analyses were presented in Tables V-1--6 and Figures V-1--3 and were described in the preceding pages.

Patterns of Career Attainment among Professional Occupations

As to the results of those analyses, it is evident that there are important differences in the patterns of attainment which characterizes the early professional careers of college graduates of different social origins. This is not to say, however, that those attainment processes are entirely dissimilar. Quite the contrary. For all groups, differences in senior year occupational expectations and the subsequent completion of graduate degrees are central determinants of the variation in individuals' postcollegiate occupational attainments. And for each group, such expectations were influenced both by the quality of college attended and by one's academic performance in college. The impact of expectations and graduate degrees upon 1968 attainment was, in each instance, only partially mediated by the status of the first job entered after college. Even after first job status is taken into account, differences in expectations and in the earning of advanced degrees continued to have significant direct impact upon subsequent occupational attainment. Understandably, first job status was for each group of college graduates the single best predictor of subsequent job status in 1968. Yet for persons of low status origins, that group making the largest gains in status after first job, the relative effect of first job status upon 1968 status was the smallest of the three groups. It was largest among those of highest status origins.

That high status graduates had, as a group, attained higher status positions seven years after college appears then to be both a function of their having held higher expectations and having received proportionately more graduate degrees and their having entered the occupational market at a significantly higher level than did graduates of lower status backgrounds. Yet after job entry, the gap in status attainment between the groups diminishes--persons of lowest status origins having made the largest gain in status, persons of highest status the least. In this respect, it is surprising that differences between the groups in 1968 occupational attainment were not greater. Given the obvious differences in social origins, quality of colleges attended expectations and graduate degrees earned, one might have expected greater differences in attainments than were actually observed. Among professional occupations at least, having completed a college degree appears over time to have largely offset the potential handicap of disparate social origins.

Characteristic patterns of attainment did differ, however, in a number of important respects, specifically as they pertain to the impact of college origins and college academic performance upon early professional career attainment. As regards the effect of college origins, though attendance at high quality colleges proved to be a distinct asset to the careers of low status graduates, they were of no importance whatsoever to the careers of high status graduates. Conversely, while attendance at low quality colleges was a handicap among the former group, among the latter this was not the case. In these data at least, the children of the well-to-do appear to have been immune from the possible ill-effects of attending low quality colleges; an immunity not shared by other groups. This is not to say, however, that attendance at the more prestigious colleges does not offer an occupational advantage relative to persons of other social groups. Clearly it does (see Tinto, 1980). Rather the data here point to the fact that attendance at such colleges is relatively more important to the careers of lower status youth than it is to those of high status.

If the attainment process is seen as essentially a competitive one in which individuals employ varying resources in order to gain occupational advantages over one another, then these data suggest that college resources, whatever they are,

are of a secondary order relative to those associated with diverse social origins (e.g., the family). Where the latter exist, the former are relatively minor in importance. Where the latter are absent, then colleges taken on added relative importance in the attainment process.

But the resources colleges may provide its graduates do not appear, in any obvious manner, to be of the sort implied by model of educational sponsorship. If they were, one would have expected graduate school origins to also have played a more significant role in early professional attainment. As noted, among persons of low status origins, the impact of college origins is largely direct. Except for a small indirect effect via expectations and a moderate impact through first job status, much of its total effect upon attainment is direct, unmediated by the completion of graduate degrees or by the quality of graduate school from which that degree was earned.

The failure of first job status to entirely eliminate the importance of college origins among low status graduates is particularly revealing. Were sponsorship the sole effect of college origins, one would have anticipated their impact to lie primarily in their providing differential entry to the occupational structure; that is, in serving as valuable "ports of entry" to the world of work. Since this was not the case, one has to conclude that its impact is as much located in the domain of behavioral modification (e.g., skill and value acquisition) as it is in the arena of direct sponsorship to work. That this is not the case among persons of high status origins suggests then either that those behaviors may already be present (e.g., via family socialization) and/or be unrelated to their own attainments after college. The appearance of a direct effect of father's education among such graduates seems to imply that the former applies. It also suggests that highly educated, well-to-do parents can aid their children in a manner that less well-to-do parents cannot. Whether this implies direct parental assistance in the attainment process (e.g., via familial associations) and/or the socializing impact of highly educated parents upon their children's attainment in an equally highly educated world of professional work is here undeterminable.

As to the underlying impact of graduate degrees upon attainment, our conclusions must be taken as extremely tentative at best. As noted, there was no distinct time-sequence in which individuals obtained graduate degrees and entered the job market. If the former precede the latter, as they generally do in these data, then one may conclude that the earning of such degrees also reflects significant behavioral modifications (presumably in the domain of skill acquisition). But as graduate degrees did not significantly mediate the effect of college origins upon attainment, one must conclude that the former's effect upon behaviors is of a different sort than that due to college origins. Given the character of professional work and the training which occurs in professional graduate programs, it may well be that the effect of colleges is more located in the domain of value modification, whereas that of graduate schools is situated more in the arena of professional skill acquisition.

The experience of middle status graduate is intermediate to those of low and high status graduates. Though college origins do matter, their impact and that of graduate school origins is entirely taken up by first job status. Yet the impact of expectations and graduate degrees remain. For these graduates, then, the impact of educational origins appears to reside largely in their providing access to the occupational structure, not in their impact upon behaviors appropriate to mobility after job entry.

As to the impact of performance in college upon occupational attainment, differences in grade point average impacted significantly upon attainment for all college graduates. In this sense, characteristic patterns of attainment were at least partially meritocratic in nature. But the manner of their impact differed among the groups. Only among persons of middle and high status origins did the effects of grade point average remain after taking account of expectations and the possession of graduate degrees. Among persons of low status origins, differences in expectations entirely mediated the impact of grade point average. And only among graduates of high status origins did differences of grades impact directly upon attainment after taking account of first job entry.

Though the findings are clear, their meanings are not. Given the absence of independent measures of native intelligence, it is difficult to determine to what degree these findings reveal real differences in attainment processes or simply mirror unmeasured variations in native intelligence among the groups. If the former applies, these findings may argue that children of the lower class, who are able to complete college, are being recruited to and promoted within the occupational structure without regard to their academic records. Employers may discount prior differences in grades among such graduates, especially for those exiting from the more prestigious college, because their very graduation sets them apart from their status counterparts in a way that graduation does not for other individuals. Since a much larger proportion of high status children graduate from college, a simple graduation from college may be insufficient to distinguish among them as to occupational potential.

Of course, it also may be the case, as suggested by Porter (1974) in reference to the early career attainment of Blacks and Whites, that high quality colleges tend to screen, socialize and sponsor persons of the lower social classes in a manner which differs from that of higher status individuals. Furthermore, that colleges and employers treat the former in a manner which is unrelated to differences in performance. That is, that there exist at least two different modes of mobility within the educational system and the occupational structure which abuts it: one sponsored and one achieved.

But if this argument were to apply, one would have to assume that educators and employers are aware of the social status origins of potential and current employees. While this may hold for differences in race, an obvious difference for most persons, it is unclear whether it applies for differences in social origins.

If differences in grade point average differentially mirror unmeasured variations in native intelligence, then we may be tapping the inability of the current analysis to fully tap differences within and among groups in the types of competencies which influence occupational attainment within professional occupations. Since persons of lower status origins are much more selective in their attributes relative to their status counterparts than are college graduates of higher status backgrounds, it might be argued that observed differences in grade point average simply do not assess differences in intelligence, motivation and drive in the same way they do among other graduates. Thus grade differences do not appear to influence attainment among the former group in the same manner as they do in the latter. Lacking independent measures of intelligence, however, we have no simple way of resolving these conflicting possibilities.

The Role of College Origins in Professional Attainment

Given the inability of graduate school origins either to significantly impact upon status attainment (in all but the limited instance among middle status graduates) or to substantially mediate the effects either of college origins or of the simple possession of a graduate degree, it would be difficult to speak here of the educational interface with the professional world of work as one characterized by interlocking chains of opportunity (White, 1970)--chains which have been argued to provide unique opportunities for graduates of particular institutions to enter the more elite positions in the occupational structure (Collins, 1971, 1974, 1979). Were this the case, most, if not all of the effect of college origins should have been transmitted via graduate school quality and first job status.

Now would it appear accurate to describe colleges as differentially serving the occupational interests of children of the socially advantaged over those of the less advantaged (Kamens, 1974, Bowles and Gintis, 1976). Were this to apply, one would have expected college differences in origins to matter more among the well-to-do graduates than among those of lower social status backgrounds. As a result, it would be difficult to interpret these findings as being clearly supportive of the revisionist argument that elite institutions primarily serve to promote persons of elite backgrounds into elite positions in the occupational structure and thereby promote the intergenerational transmission of inequality within the social system. Though high status graduates do obtain a headstart in the occupational marketplace of professional work, much of that advantage appears traceable to family origins and heightened expectations, not to the unique impact of colleges upon their careers. Children of the well-to-do seem to do well in the occupational marketplace despite colleges, not because of them. On the other hand, for those persons of lower status origins *who are able to enter and complete* college degrees at the more prestigious colleges, it does appear that colleges do measurably aid their early professional careers.

Of course, it is the case that lower status persons, as a group, go on to higher education less frequently than do persons of higher status origins. When they do, they are less likely to enter the four-year college sector generally and the more prestigious colleges in particular than are higher status individuals. And in doing so, the former are somewhat less likely to complete their degree programs than are the latter. Thus, it cannot be argued unequivocally that the higher educational system does not function so as to serve the interests of the social elite. It may well be the case that the critical transition lies in the interface between the completion of high school and the entry to the higher educational system (note the impact of high school type upon quality of college attended) and in the social differentiation of participation which occurs in the diffusion of persons into the higher educational structure (see Tinto, forthcoming). Nevertheless, given that transition, that is, the distribution of individuals among institutions of differing level and quality, it does not appear here that attendance at elite institutions benefits the well-to-do alone. Rather among professional occupations, the reverse appears to hold: namely, that the greatest benefit is derived by the persons of low status who are able to complete their degrees in those institutions.

Whether this applies equally well to attainment in other occupational segments is of course not known. In this regard, it might be argued that these findings reflect the meritocratic character of professional work more than they do the underlying character of educational impacts upon status attainment generally. Regrettably, we have no way of determining if this is the case. For that determination we must await further studies, those that focus on attainment in other occupational segments. For the moment at least, we must--as noted at the outset--strictly limit our conclusion to the professional occupational structure only.

CHAPTER SIX

CONCLUSIONS AND IMPLICATIONS

Summary of the Study: Its Origins, Data, and Analytic Procedures

This study began with a question; namely does it matter where one goes to college? More importantly, it originated with a questioning of the conceptual basis upon which most past research on this issue has been carried out. It was proposed that the classical human capital theory's view of the labor market was essentially flawed, specifically as it pertains to the analysis of the interface between the educational system and the world of work. In its stead, it was suggested in Chapter Two that a theory of segmented labor markets was more likely to capture the complexity and variability of that interface than was one, like the classical human capital theory, which assumed a homogeneity of the relationship between the supply and demand of labor across differing occupational segments of the labor market.

It was further proposed that the application of the theory of segmented or "balkanized" labor markets to the study of the effect of college origins upon subsequent occupational attainment might give rise to results which differ markedly from those reported in previous research; namely that college origins (as measured by college quality) were relatively unimportant to the process of occupational attainment. At the same time, it was also suggested that our view of the manner in which college origins feed into subsequent attainments could also be altered. In the continuing debate between the meritocratic and revisionist schools of thought, it was observed that both views give little attention to the impact of occupationally-specific work structures upon the ways in which prior educational experiences influence subsequent occupational careers. Especially for those careers which are played out entirely within one primary occupational grouping, it was argued in Chapter Two that a comparative analysis of education and occupational attainment in differing occupations could yield new insights into the complex and still uncharted interface between schooling and work which neither view had hithertofore produced.

In this light data were obtained from the National Opinion Research Center follow-up study of the occupational and educational activities of the college class of 1961 and analyzed via the application of path regression techniques. As described in Chapter Three and in Appendices A, B and C, these analyses were limited to the activities of male graduates who entered professional and business-managerial occupations after college graduation and remained therein seven years after exiting from college. The activities of female graduates were not included in the present analyses.

Special attention was given in Chapter Three to the limitations of the study and to the impact of those limitations upon our ability to understand the manner in which college origins influenced, if at all, subsequent occupational careers. First, as to the absence of comparable analysis for female college graduates, it was noted that the data on their post-collegiate activities indicated a very restricted range of occupational participation; a restriction in occupational variance which essentially prevented the utilization of path regression techniques for the assessment of college impacts. This does not mean that college origins did not affect female careers, only that our analytic procedures could not make such a determination. Nevertheless, it was pointed out in Appendix C that these data are meaningful in their own right as they do depict a highly differentiated mode of career "pathing" of the occupational experiences of female college graduates in the 1960's. The term "occupational tracking" is not an inaccurate way of describing the striking differences between the patterning of career paths of male and female graduates in these data. Nor is it unwarrented to point out the parallels between the application of that term to the channelling of persons into and through the world of work and that used to describe and analyze the tracking of students through schooling (see Rosenbaum, 1975, 1979). The underlying processes can be very much the same. Fortunately more recent data and more refined analyses of female careers are now producing new insights into the differentiated nature of the work experiences (e.g., see Rosenfeld, 1978, 1980; Boyd and Humphreys, 1979; and Yohalen, 1979). Hopefully future analyses will permit us to assess the same manner as we have for males the ways in which college origins influence the careers of female graduates.

It was also noted in that chapter that the basis for the measurement of occupational attainment was itself a source of constraint to the study. The currently employed U.S. Census codes which categorize occupational positions in the labor force tend to restrict the range of occupational titles and therefore limit the detail with which one can study intra-occupational movements. Only the use of more detailed coding systems (e.g., DOT titles) and/or the provision of more detailed occupation-specific movements can remedy this constraint. Though such information was not available for this study, they are now becoming available for future research on this question (see Rosenbaum, 1979 and Spenner and Otto, 1979).

Though not noted earlier, it should also be observed that the analytic procedures employed here (which are those commonly employed to study these sorts of questions) are themselves prone to error in the estimation of occupational attainment models. Such structural equation models derived from path regressions assume no error in the measurement of the independent variables used in the analysis. As we know that this assumption is never entirely correct, the possibility exists that calculated path coefficients reflect measurement error as much as they do the underlying 'latent' behaviors the variables are designed to measure. Though a very recently devised procedure has been developed to attend to this measurement problem (Jöreskog, 1972, 1977), it was not available for use here. The appropriate analytic tool, (e.g., Lisrel) was only recently available in the University. And as of yet very few persons are sufficiently skilled in the utilization of its complicated procedures (for an example of its application see Mortimer and Lorence [1979]).

It is difficult at this point to estimate how an accounting of measurement error would have affected the outcomes of this study. Past utilization of Lisrel has tended to somewhat reduce the strength of relationships previously determined by earlier research. In this case, however, there are a number of reasons to believe that accounting for measurement error would not substantially alter the essence of our findings. As pointed out, we have made a number of assumptions which together serve to underestimate the total impact of college origins upon subsequent attainments (e.g., we have not included college entrants in the sample). Nevertheless, it is the case that only a reanalysis of these data with a program like Lisrel will definitely answer the question of measurement error. Such reanalysis was not possible within the time-span of the current project.

Summary of the Study: Its Findings

The results of the study were summarized and discussed in detail in each of the preceding chapters. Chapter Four reported the results of the analysis of the impact of college origins upon the careers of male graduates in professional and business-managerial occupations. Chapter Five reported the outcome of the analyses designed to test the variable impact of college origins upon the professional careers of male graduates of different social status backgrounds.

In the former instance, it was concluded, contrary to prevailing research findings, that college origins do influence subsequent occupational careers in both direct and indirect fashion. They do so, however, only among professional occupations, not among business-managerial ones. It was further concluded that the impact of college origins was two-fold. On one hand, they served to provide differential access to high-level entry positions in the world of work (first job status). On the other, they also appeared to be associated with subsequent mobility given level of initial entry. In each instance, the inclusion of measures of graduate school origins did not entirely reduce the direct impact of college origins upon subsequent careers. It was therefore suggested that the effect of college origins could not be simply captured by conceiving of its impact as occurring entirely through its presumed linkages through graduate schools to entry to the world of work (e.g., as described in the "chains of opportunity" models).

As to the results of the analysis in Chapter Five of the variable impact of college origins among persons of differing social status backgrounds, it was concluded that there were important differences in the degree and manner in which college origins affected subsequent educational and occupational careers. Specifically, it was determined that college origins played a more important role among persons of low status origins than it did among persons of middle and high status backgrounds. Given the obvious advantages of being high status, it seemed to be the case that attendance at a high or low quality college served neither as a significant asset nor as a substantial constraint to the careers of high status college graduates. On the other hand, given the character of low status origins, having attended a high as opposed to a low quality college did appear to significantly assist the careers of low status college graduates. At the same time, we found that performance in college, as measured by grade point average, was more important to the attainments of high status graduates than it was among low status ones. Thus we concluded that these analyses yielded a picture of college effects which differed markedly from that suggested by most members of the revisionist school of thought (e.g., Bowles and Gintis, 1976), namely that the college system primarily serves to benefit the children of the well-to-do and to constrain the opportunities of the less fortunate. We found little evidence here for that conclusion.

Implications of the Study: Our Changing View of the Dynamics of Educational Stratification

It is evident that the results of the study serve to challenge some of the more publicized views of the nature and dynamics of educational and social stratification (e.g., Jencks et al., 1972 and Bowles and Gintis, 1976). Furthermore, they direct our attention toward a conception of educational stratification which is neither purely meritocratic nor strictly socially selective in nature--one which combines various elements of the theories of social sponsorship, meritocratic achievement, and opportunity structure into a view that stresses both the importance of performance and of "being at the right place at the right time." For the lack of a better term, we will refer to this conception of educational stratification as the theory of latent opportunity.

At the center of this theory is a conception of stratification systems which emphasizes the opportunity structure of society. That is, such systems are made up of interlocking sets or "chains" of opportunity which provide individuals and groups with varying degrees of access to the important social resources available in society (see White, 1970). But rather than being constructed in one rigidly defined pyramid of positions hierarchically arranged according to status, the stratification system is made up of more loosely coupled segments or clusters of positions each with its own characteristic ordering of positions according to status internally defined. Within and between each segment are interlocking chains of positions (or opportunity) which provide for movement within segments and between segments across the stratification system.

In many respects, such stratification systems resemble the medieval cities of Europe with their segmented residential districts (mini-cities within the city) and complex patterns of roadways which provide for district-specific and city general paths of movements. Some paths (chains of opportunity) cross-cut the city providing boulevard-like access to various parts of the city and to its central core at which major power was located. Others, more local in nature, provided access only to local districts, while others served to inter-relate one district to another. Movement in the city, as with movement in the stratification system, depended on one's ability to gain access to these differing pathways (or chains of opportunity). More rapid movement to the center core of the city was made possible via the major boulevards (central chains of opportunity). Yet access to them was often difficult and limited. Other pathways, like side streets, gave more limited access to those boulevards, while others turned in upon themselves, like back alleys and dead-ends, providing for no significant movement around the city.

If one now views the social stratification system as being made up of inter-related or over-lapping cities each associated with the major components of society (in other words the occupational market, the political system, the educational system and the like) one has a conception of that system which is essentially that drawn from the theory of opportunity structures. The importance of this view of the stratification system for our study lies both in its characterization of the segmented nature of the system and in its notion of coupling of differing segments and cities to the larger system. The relationship between the educational system and other systems, in this case the occupational market, depends very much on the nature of their own internal structure and on the linkages or chains of opportunity which articulate movement within and between them. In this particular instance, the study of the effect of college origins upon occupational careers is, in effect, a study of the manner in which their linkages influence movement between and within the educational and occupational system. And when the occupational market is seen as having its own system of segmentation, the study is also one of determining the varying degrees of articulation between the educational system and differing segments in the occupational system.

Given this conceptualization of educational and occupational stratification (as components of a larger structure of stratification), it follows from the results of the present study that differential movement along these chains of opportunity (i.e., greater occupational attainment) is as much a function of the performance of individuals with those chains as they are of the opportunities inherent in them. Furthermore, it also follows that the degree of coupling between educational chains and those of differing segments within the occupational system are quite variable, some being much more highly articulated than others.

As this pertains to the question of the sponsorship effect of collegiate institutions, these results suggest that sponsorship is primarily a latent capacity of institutions, one which could be activated by individual merit. As indicated in the analysis, simple presence at a high quality institution appeared to be a necessary but insufficient basis for being sponsored into the elite positions in differing occupational segments. Sponsorship, in the form of institutional assistance, appeared to be conferred upon those individuals within the institution whose performance warrented such sponsorship. It was not simply given to all those who were fortunate enough to gain access to the institution. Of course, gaining access to those institutions (important links in educational chains of opportunity) is not random process nor one without significant social selectivity. As evidenced in a variety of other studies, access to higher education generally and to elite or high quality institutions in particular is clearly a function both of individual social status origins and of merit (e.g., see Astin, 1965 and Karabel and Astin, 1975). Nevertheless, once access has been gained, merit more than status origins appears to be the activating force in subsequent sponsorship and attainment within the educational system and between it and the occupational system.

Thus the notion of latent sponsorship (Tinto, forthcoming). And the view which argues that while it is important to be able, it is also important to demonstrate that ability in those contexts (high quality educational institutions) which differentially promote the able to elite positions in the occupational world. Being able and being able to be at the right place at the right time is one way of phrasing this phenomena. While the former is more a function of individual merit, the latter is equally a function of the social position of individuals in the larger stratification system (e.g., social status backgrounds).

These results at least for professional occupations also suggest that the impact of institutional resources upon the attainment of individuals is relative to those which the individual or groups of individuals can themselves bring to bear on the process of getting ahead in the occupational world.

Thus for persons of high status origins graduating from the higher education system, attendance at high quality institutions did not serve as significant increments to subsequent attainments. In the same fashion, attendance at low quality institutions did not serve as a significant constraint to attainment. Such persons appeared to be relatively immune from the effects of such variable attendance patterns. Perhaps that is in fact the social meaning of being of high status origins. Yet their immunity did not prevent them from feeling the effects of poor performance within college. The system is, in this respect, essentially meritocratic in nature.

On the other hand, for persons of low status origins graduating from the higher educational system, attendance at high as compared to low quality institutions did serve to significantly assist subsequent occupational attainment. For those persons the resources (latent opportunity) available within high quality institutions appeared to provide significant additions to the set of resources that are brought to bear in the attainment process. Thus, contrary to the view of some revisionist theorists, persons of low status origins had, in this sense, more to gain from the higher educational system than did persons of high status. Again we refer here only to attainment within professional occupations rather than all occupations generally.

The failure to find performance effects among low status college graduates, as we did among high status graduates, is somewhat confusing. Though what is assumed here to be a reflection of motivational forces not adequately gauged by grade point averages, might also be argued by some to be a reflection of a type of sponsorship system within which the few low status individuals fortunate enough to be granted entry are sponsored irrespective of performance. Porter's (1974) analysis and interpretation of observed differences in Black and White patterns of attainment through schooling may be taken as example of this view of sponsorship (also see Turner, 1960). The view here is that this is not the case. Nevertheless, it is recognized that more detailed analysis of other data will be needed to resolve this debate.

Finally, the findings of the study as they pertain to the analysis of professional and business-managerial occupations, strongly suggests that the manner in which educational chains link up to and influence attainment within the occupational system is a direct function of the characteristics of the particular occupational segment within which attainment is sought. Clearly, the model of attainment via schooling to work which applies to professional careers will be quite different from that which, when developed, specifies success within the business-managerial world. Thus, the important notion arises that it is the structure or work contexts which drives the relationship between schooling and work, not the other way around.

Implications of the Study: Our Changing View of Policy

These findings, especially that just elucidated, have a number of implications for our view of the types of policies one would have to employ to effectively deal with the question of social inequality. First and foremost, it clearly suggests that policies have to be tailored to the specific occupational segment in question. Second, it also points up the need to work from the demand side of the equation of labor dynamics as much as from that of supply. In particular it implies that we need provide incentives in the occupational market as much as we do in the educational market. If it is the structure of work which drives the character of the interface between schooling and work, then educational policies which ignore the occupational market are doomed to failure in the long-run. Third, these findings also imply the need to attend, more intensively, to the educational transition between high school and the higher educational system. In particular, we need ask not the question of who goes to college. Rather we need pose more clearly the question of who goes where to college. And do so in a manner which is cognizant of the occupational specific character of that question. Finally, the study also suggests that we need not be overly concerned (to the point of obsession) with the supposed social discrimination which is argued to occur within higher education (e.g., Bowles and Gintis, 1976). While the issue may be and undoubtedly is important as it pertains for instance to racial minorities and to females in higher education, it does not in these data appear to be an issue between social status groups of the male gender. Thus the study also implies that our policies designed to reduce social inequality need carefully distinguish between the various forms of inequality which exist in the educational system, namely those of social status, racial, and sexual inequality. Though this latter notion is certainly not original to this study, the manner in which it applies to the world of work is.

Implications of the Study: The Continuing Need for Additional Research

As with all research, the limitations and the findings give rise both to new insights as to the character of social behavior and to the recognition that more work needs to be done to answer the questions which remain unanswered and/or which arise in the course of doing that research. Among the various items which come to mind, the most pressing are those requiring better measures of attainment, better and more wide ranging data on attainment and more detailed studies of the varying modes and contexts of attainment.

As to measures of attainment, it is clear that we need more detailed measures of movement within the occupational structure. Those which would indicate both inter and intra-occupational movements as well as those which would permit the careful tracing out of career paths (or trajectories) over time (see Spilerman, 1977 and Spenner and Otto, 1979). Though some of these measures are now available (e.g., DOT titles) and/or are now being developed, they have yet to be applied to the sorts of data files required to answer the question which arises here.

As to data on attainment, we simply do not yet have generally available the sorts of data to permit meaningful and wide-ranging inter-occupational comparative analyses to be carried out of the sort employed here. Though this researcher sorts out such data, none was available in the form that would permit detailed analysis. Fortunately, some of those data are now being collected and analyzed (e.g., the Boys Town study of occupational careers [Otto and Spenner, 1979]). Others, however, which have been collected remain to be fully analyzed (e.g., the last wave of the NLS study of the high school class of 1972) in the fashion suggested here.

Finally, as to the other types of studies which need be carried out, several are suggested by this research. First, it is evident that we need more comparative studies of this sort (i.e., occupation comparisons) which also permit the separate analysis of male and female careers as well as those of different racial groups. Though comparative analyses of male and female and of Black and White careers have been carried out (Alexander and Eckland, 1974; Blum, 1972; Coleman, Berry, and Blum, 1972; Chase, 1975; Kerchoff and Campbell, 1977; McClendon, 1976; Porter, 1974; Porter and Wilson, 1976; Rosenfeld, 1980; Spaeth, 1977; Stolzenberg, 1975b; and Treiman and Terrell, 1975a), they have virtually ignored the occupational specific character of those careers. It is the latter type of analysis which is suggested here as being important to our further understanding of the complex dynamics of social stratification.

More importantly, it is also suggested here that we need more intra-occupational studies of the movements of differing entrants to the occupation over their careers which take account of the educational linkages which articulate schooling with the occupation in question. Similarly we need additional research on the manner in which the organizational context of work influences careers and the manner in which education feeds into the attainment process. Though Rosenbaum's

(1979) recent study of one large organization is a welcome addition to the field, we simply do not yet have enough such studies to enable us to develop a meaningful theory of attainment in the work place. And it is also apparent that we need do more case studies involving observation of the variable manner in which individuals experience entry to and attainment within the various worlds of work (e.g., see Granovetter's [1974] study of getting a job).

In all this, it is hoped that the current research has added in some fashion to our further knowledge of this still uncharted field of educational and social stratification.

APPENDICES

APPENDIX A

TIME SEQUENCE OF COLLEGE TO WORK MOVEMENTS

One of the more striking characteristics of the activities of the 1961 male college graduates was the great variety of movements they exhibited in exiting from college in 1961 and gaining an occupational position in 1968. As seen in Figure A-1, it is evident that only a small percentage (11%) of male college graduates followed the direct path of college to graduate school to work (profiles B and C). An equal percentage (12%) follow other paths which entail simultaneous combinations of graduate school attendance (full and/or part-time) and full and/or part-time work (profiles D thru H). Another nineteen percent follow paths of other sorts, not described above (e.g. college to work to graduate school and back to work).

Given such variety in the time sequencing of college to work movements, it is clear that longitudinal path analysis of first job status and of 1968 job status is not possible. Specifically, the condition of unequivocal time-sequence is violated by a sizable proportion of college graduates. Many graduates enter graduate school and first job at the same time, while others start work then go onto graduate school. Yet a number of prior studies make no note that such behaviors typically occur. Rather they seemingly assume that all persons follow a lock-step pattern; a pattern which in these data is characteristic of less than half of all those who go onto complete advanced degrees after college graduation.

The obvious variety of patterning of graduate education also gives rise to the notion that much yet remains to be done in terms of the study of how individuals go about earning advanced degrees. We have failed to give enough attention to the influence of work experiences in this matter.

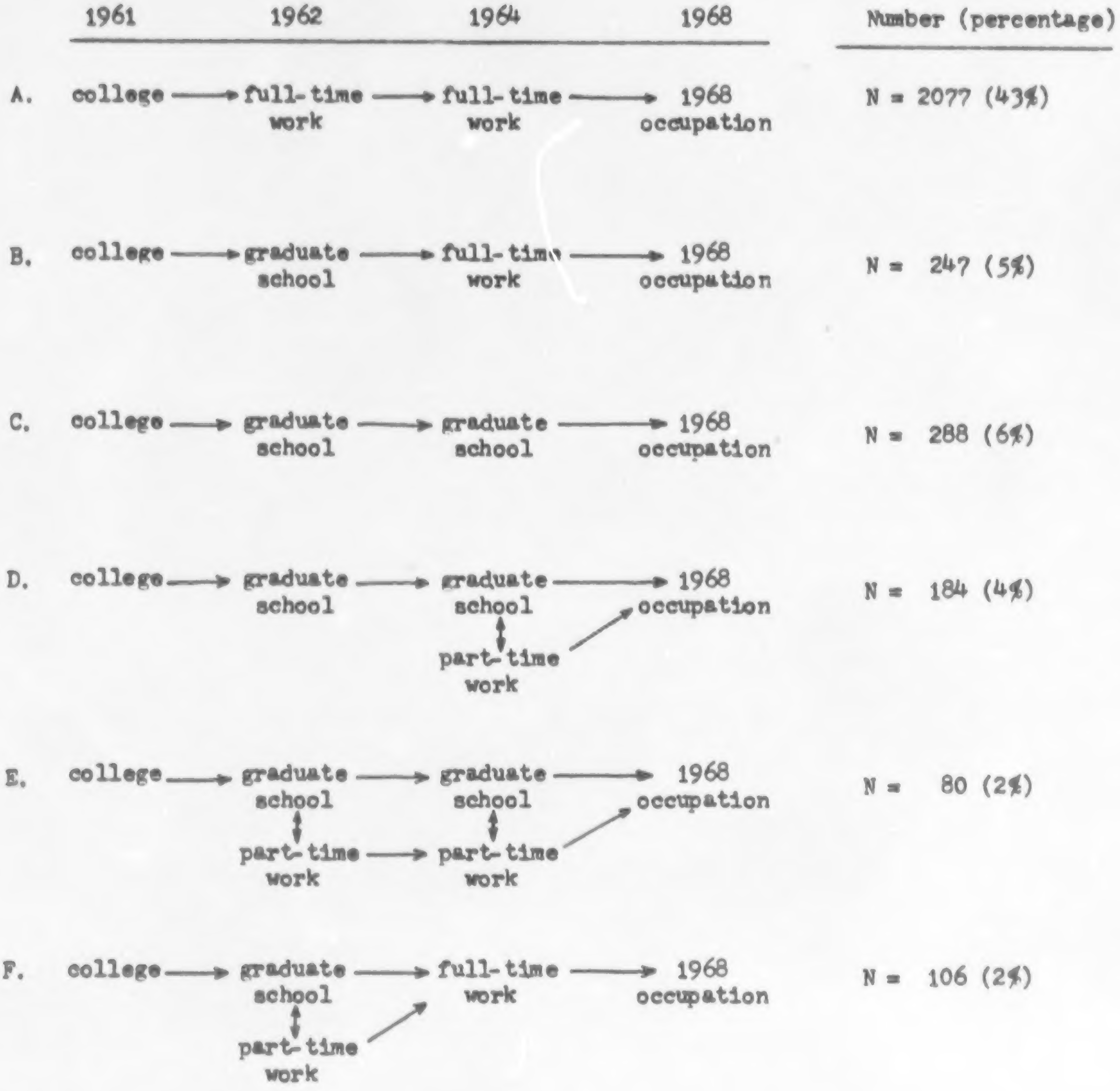
1961
1962
1964
1968
Number (percentage)
A. college → full-time work → full-time work → 1968 occupation
N = 2077 (43%)
B. college → graduate school → full-time work → 1968 occupation
N = 247 (5%)
C. college → graduate school → graduate school → 1968 occupation
N = 288 (6%)
D. college → graduate school → graduate school ↕ part-time work → 1968 occupation
N = 184 (4%)
E. college → graduate school ↕ part-time work → graduate school ↕ part-time work → 1968 occupation
N = 80 (2%)
F. college → graduate school ↕ part-time work → full-time work → 1968 occupation
N = 106 (2%)

Figure A-1: College to Work Time-Sequence Profiles: Males College Graduates, All Occupations.

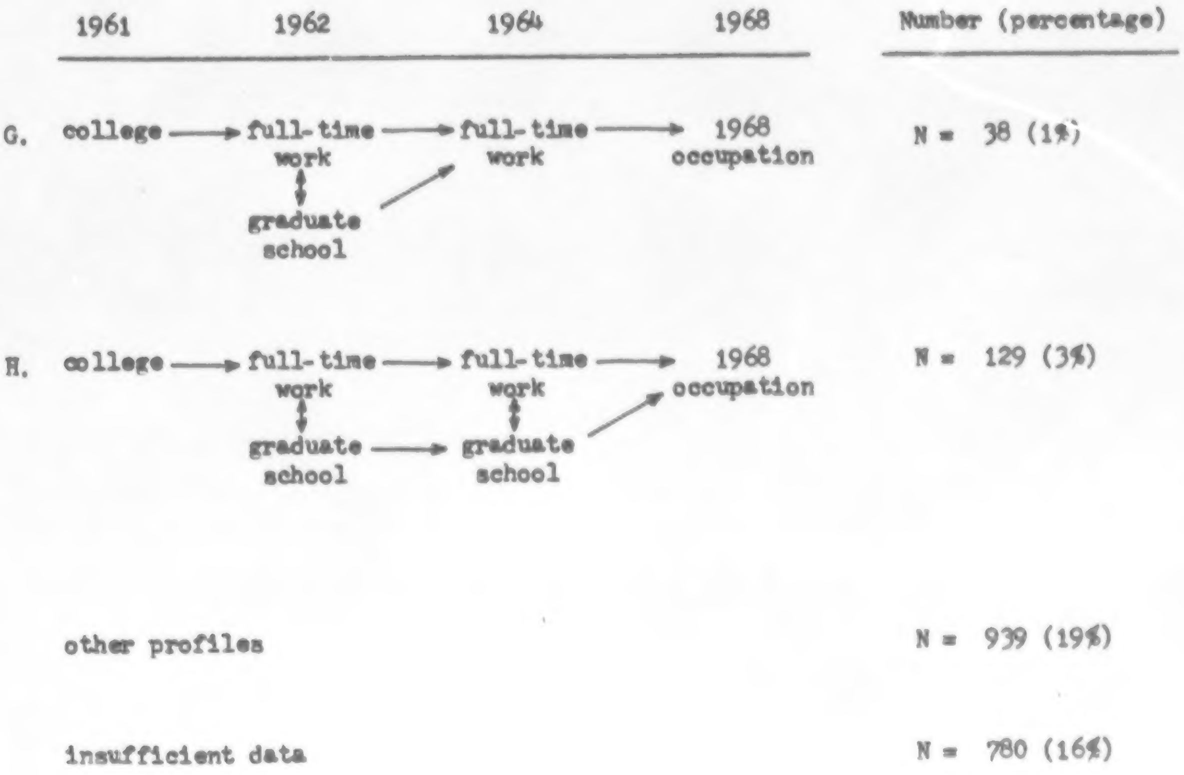
1961
1962
1964
1968
Number (percentage)
G.
college
full-time work
graduate school
full-time work
1968 occupation
N = 38 (1%)
H.
college
full-time work
graduate school
full-time work
graduate school
1968 occupation
N = 129 (3%)
other profiles
N = 939 (19%)
insufficient data
N = 780 (16%)

Figure A-1: College to Work Time-Sequence Profiles: Male College Graduates, All Occupations.

APPENDIX B

LIST OF COLLEGIATE INSTITUTIONS IN THE NORC SAMPLE

Alabama, University of
Albion College, Albion, Michigan
Arkansas State College, State College, Ark.
Arkansas, University of
Atlantic Union College, S. Lancaster, Mass.
Auburn University, Auburn, Alabama
Beloit College, Beloit, Wisconsin
Blackburn College, Carlinville, Illinois
Boston College
Boston University
Briar Cliff College, Sioux City, Iowa
Bridgewater College, Bridewater, Va.
Brooklyn College, Brooklyn, N.Y.
Brooklyn Polytechnic Institute of New York
Brown University, Providence, R.I.
California, University of - Berkeley
California, University of - Los Angeles
Carnegie Institute of Technology, Penns.
Case Institute of Technology, Cleveland, Ohio
Chico State College, Chico, Calif.
Cincinnati, University of
Clark University, Worcester, Mass.
Cleary College, Ypsilanti, Michigan
Clemson Agricultural College, South Carolina
Colorado State University, Fort Collins
Colorado, University of
Columbia University, N.Y.
Concordia Teachers College, Seward, Neb.
Cornell University, Ithaca, N.Y.
Dartmouth College, Hanover, N.H.
Delaware, University of
De Paul University, Chicago, Ill.
Detroit, University of
Drexel Institute of Technology, Philadelphia
Eastern Michigan University, Ypsilanti, Michigan

Eastern Oregon College, Le Grande
Eastern Washington College of Education, Cheney
Evansville College, Evansville, Indiana
Florence State College, Florence, Alabama
Fordham University, N.Y.
Fort Valley State College, Georgia
Fresno State College, Fresno, Calif.
Greenville College, Greenville, Illinois
Hamline University, St.Paul, Minn.
Harvard University- Radcliffe, Cambridge, Mass.
Haverford College, Haverford, Penna.
Hawaii, University of
Hebrew Teachers College, Brookline, Mass.
Henderson State Teachers College, Arkadeplhia
Holy Cross, College of the, Worcester, Mass.
Hood College, Frederick, Maryland
Hunter College, N.Y.
Huron College, Huron, S.D.
Illinois Institute of Technology, Chicago
Illinois, University of, Urbana
Indiana University, Bloomington
Iowa State University, Ames
Kansas, University of, Lawrence
Kentucky, University of, Lexington
Lake Erie College, Painesville, Ohio
Lake Forest College, Lake Forest, Ill.
Langston University, Langston, Oklahoma
Le Moyne College, Syracuse, N.Y.
Long Beach State University, Long Beach, Calif.
Long Island University, Brooklyn, N.Y.
Los Angeles State College, Los Angeles, Calif.
Lycoming College, Williamsport, Penna.
Manhattanville College, Purchase, N.Y.
Marquette University, Milwaukee, Wisc.
Maryland, University of, College Park
Mary Washington College, Fredericksburg, Va.
Massachusetts Institute of Technology, Cambridge
McKendree College, Lebanon, Illinois
Memphis State University, Memphis, Tenn.
Merrimac College, North Andover, Mass.
Miami, University of, Florida
Michigan State University, East Lansing, Michigan
Michigan, University of, Ann Arbor
Mills College of Education, N.Y.
Minnesota, University of - Minneapolis
Minnesota, University of - Duluth

Mississippi Southern College, Hattiesburg
Mississippi State University, State College
New Jersey State Teachers College
New York, City College of
New York, State University of:
    College of Education at Buffalo
    College of Education at Fredonia
New York University, New York City
North Carolina, University of, Chapel Hill
Northland College, Ashland, Wisconsin
Northwestern University, Evanston, Illinois
Notre Dame of Maryland, College of, Baltimore
Notre Dame University, South Bend, Indiana
Oberlin College, Oberlin, Ohio
Ohio State University, Columbus
Ohio Wesleyan University, Delaware
Oklahoma Baptist University, Shawnee
Oklahoma, University of, Norman
Oregon State College, Corvallis
Oregon, University of, Eugene
Pasadena College, Pasadena, Calif.
Pembroke State College, Pembroke, N.C.
Pennsylvania State University, University Park
Pennsylvania, University of, Philadephia
Pittsburgh, University of
Princeton University, Princeton, N.J.
Rensselaer Polytechnic Institute, Troy, N.Y.
Rochester Institute of Technology, Rochester, N.Y.
St. Benedict, College of, St. Joseph, Minn.
St. Bonaventure University, St. Bonaventure, N.Y.
St. Scholastica, College of, Duluth, Minn.
Sam Houston State Teachers College, Texas
San Jose State College, San Jose, Calif.
South Dakota, State University of, Vermillion
Southeastern State College, Durant, Oklahoma
Southern California, University of, Los Angeles
Southern Illinois University, Carbondale
Southern Methodist University, Dallas, Texas
Southern University, Baton Rouge, La.
Stanford University, Stanford, Calif.
Susquehana University, Selinsgrove, Penns.
Sweet Briar College, Sweet Briar, Va.
Syracuse University, Syracuse, N.Y.
Texas, University of, Austin, Texas
Tulane Univerisity, New Orleans, La.

Ursinus College, Collegeville, Penns.
Wagner College, Staten Island, N.Y.
Washington University, St. Louis, Missouri
Washington, University of, Seattle, Washington
Wayne State University, Detroit, Michigan
Western Kentucky State College, Bowling Green
Western State College of Colorado, Gunnison
Williams College, Williamstown, Mass.
Wisconsin, University of, Madison, Wisc.
Wyoming, University of, Laramie
Xavier University, Cincinnati, Ohio

APPENDIX C

DISTRIBUTION OF 1968 OCCUPATIONS OF MALE AND FEMALE 1961 COLLEGE GRADUATES

The following tables (C-1 and C-2) provide information on the 1968 occupational distribution of male and female college graduates in the longitudinal data file utilized in this study (the 1968 seven year follow-up study). Table C-1 gives the numbers and percentages of male and female graduates who, in 1968, were found either not employed (missing data) and/or in different occupations as classified by the 1960 three-digit U.S. Census codes. Table C-2 gives information on the descriptions of each of the occupational codes found in the prior table.

Two important facts can be derived from these tables. First, it is clear that a much larger percentage of female college graduates are unemployed in 1968 than are male graduates. Of 3401 females in the sample, some 1665 (or 48.9 percent) are unemployed in 1968. Among males the equivalent percentage is 5.9 percent (275 of 4634). Second, there are striking differences in the distribution of male and female graduates among different occupations. The most noticeable of these differences is found in the occupation of teacher and in the field of engineering. Among females, nearly half of all those employed in 1968 are found in teaching (elementary and/or secondary), whereas only thirteen percent of males are so employed. Yet among the engineering occupations, there are no females found in 1968 while some eleven percent of males are so employed.

For female graduates then, the skewed character of the employment (and unemployment) undermines the utility of path regression techniques in the study of college effects upon occupational attainment. Though Spaeth (1977) did use these data thusly, the present researcher finds such analysis quite problematic.

TABLE C- 1

Distribution of 1968 Occupations of Male and Female College Graduates *
(N's with percentages in parenthesis)

U. S. Census Codes	Male Graduates	Female Graduates
000	188 (4.3)	19 (1.1)
001	1 (0.0)	-
002	18 (0.4)	-
003	36 (0.8)	-
004	7 (0.2)	15 (0.9)
006	7 (0.2)	3 (0.2)
007	66 (1.5)	4 (0.2)
009	105 (2.4)	6 (0.3)
010	10 (0.2)	-
012	1 (0.0)	-
013	30 (0.7)	2 (0.1)
014	7 (0.2)	-
015	13 (0.3)	1 (0.1)
016	13 (0.3)	-
017	2 (0.0)	-
018	23 (0.5)	14 (0.8)
019	-	2 (0.1)
023	13 (0.3)	-
024	14 (0.3)	3 (0.2)
025	1 (0.0)	-
026	7 (0.2)	-
027	44 (1.0)	15 (0.4)
028	63 (1.4)	50 (2.9)
029	18 (0.4)	14 (0.8)
031	-	1 (0.1)
032	9 (0.2)	2 (0.1)
033	13 (0.3)	7 (0.4)
034	1 (0.0)	8 (0.5)
035	2 (0.0)	9 (0.5)
036	41 (0.9)	19 (1.1)
041	26 (0.6)	-
042	31 (0.7)	-
043	69 (1.6)	-
044	128 (2.9)	-
045	44 (1.0)	-
046	53 (1.2)	-
047	12 (0.3)	-
048	6 (0.1)	-
049	90 (2.1)	-
051	2 (0.0)	2 (0.1)
053	20 (0.5)	-
054	1 (0.0)	3 (0.2)
055	175 (4.0)	6 (0.3)
056	9 (0.2)	73 (4.2)
057	50 (1.1)	55 (3.2)
058	1 (0.0)	74 (4.3)
059	-	2 (0.1)
061	7 (0.2)	-
062	34 (0.8)	12 (0.7)
063	6 (0.1)	-
067	9 (0.2)	4 (0.2)
068	48 (1.1)	2 (0.1)
069	28 (0.6)	6 (0.3)
070	1 (0.0)	1 (0.1)
072	21 (0.5)	4 (0.2)
073	37 (0.8)	3 (0.2)
074	1 (0.0)	-
075	99 (2.3)	14 (0.8)
076	6 (0.1)	-
077	16 (0.4)	12 (0.7)
078	15 (0.3)	15 (0.9)
079	44 (1.0)	45 (2.6)
081	40 (0.9)	1 (0.1)
082	12 (0.3)	20 (0.7)
083	3 (0.1)	-
084	7 (0.2)	12 (0.7)
090	-	1 (0.1)
092	6 (0.1)	1 (0.1)
093	579 (13.3)	861 (49.6)
094	1 (0.0)	19 (1.1)
095	10 (0.2)	1 (0.1)
096	7 (0.2)	9 (0.5)

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* see Table C- 2 for descriptions of codes.

TABLE C - 1 (continued)

U.S. Census Codes	Male Graduates	Female Graduates	U.S. Census Codes	Male Graduates	Female Graduates
097	8 (0.2)	19 (1.1)	289	4 (0.1)	1 (0.1)
098	-	11 (0.1)	290	92 (2.1)	3 (0.2)
099	231 (5.3)	95 (5.5)	291	18 (0.4)	-
100	21 (0.5)	-	292	17 (0.4)	-
123	13 (0.3)	-	293	4 (0.1)	-
172	1 (0.0)	-	294	25 (0.6)	7 (0.4)
200	11 (0.3)	8 (0.5)	295	12 (0.3)	-
201	1 (0.0)	-	296	105 (2.4)	-
203	1 (0.0)	-	297	67 (1.5)	7 (0.4)
204	4 (0.1)	1 (0.1)	298	86 (2.0)	5 (0.3)
205	1 (0.0)	-	299	10 (0.2)	2 (0.1)
210	5 (0.1)	-	300	12 (0.3)	5 (0.3)
220	201 (4.6)	17 (1.0)	310	-	4 (0.2)
221	2 (0.0)	-	320	1 (0.0)	-
222	7 (0.2)	-	342	1 (0.0)	-
223	1 (0.0)	-	350	-	35 (2.0)
224	1 (0.0)	-	390	24 (0.6)	12 (0.7)
225	2 (0.0)	-	400	17 (0.4)	1 (0.1)
228	10 (0.2)	-	420	-	1 (0.1)
229	31 (0.7)	1 (0.1)	450	24 (0.6)	-
230	1 (0.0)	-	470	6 (0.1)	-
250	232 (5.3)	23 (1.3)	480	2 (0.0)	-
259	22 (0.5)	1 (0.1)	490	66 (1.5)	6 (0.3)
261	3 (0.1)	-	510	1 (0.0)	-
262	1 (0.0)	-	512	1 (0.0)	-
263	1 (0.0)	-	514	6 (0.1)	-
264	8 (0.2)	-	515	1 (0.0)	-
265	3 (0.1)	-	523	20 (0.5)	-
266	1 (0.0)	-	533	1 (0.0)	-
267	1 (0.0)	-	545	2 (0.0)	-
269	21 (0.5)	-	554	1 (0.0)	-
272	1 (0.0)	-	565	2 (0.0)	-
279	-	1 (0.1)	595	262 (6.0)	7 (0.4)
280	29 (0.7)	1 (0.1)	603	6 (0.1)	-
281	11 (0.3)	-	605	1 (0.0)	-
282	1 (0.0)	-	614	2 (0.0)	-
283	1 (0.0)	-	670	-	3 (0.2)
284	1 (0.0)	-	680	2 (0.0)	-
285	4 (0.1)	-	685	1 (0.0)	-
286	1 (0.0)	-	690	6 (0.1)	3 (0.2)
287	9 (0.2)	-	731	2 (0.0)	-
288	10 (0.2)	-	764	-	2 (0.1)

TABLE C - 1 (continued)

U.S. Census Codes	Male Graduates	Female Graduates
773	17 (0.4)	-
784	1 (0.0)	3 (0.2)
790	-	6 (0.3)
810	2 (0.0)	-
820	1 (0.0)	-
840	5 (0.1)	-
970	2 (0.0)	-
Total N	4359	1736
Missing N	275	1665

TABLE C-2

1960 OCCUPATIONAL CLASSIFICATIONS

Occupation Code	Occupational Description
	PROFESSIONAL, TECHNICAL AND KINDRED WORKERS
000	Accountants and auditors
001	Actors and actresses
002	Airplane pilots and navigators
003	Architects
004	Artists and art teachers
006	Authors
007	Chemists
009	Clergymen
010	College presidents and deans
012	Professors and instructors, agricultural sciences
013	Professors and instructors, biological sciences
014	Professors and instructors, chemistry
015	Professors and instructors, economics
016	Professors and instructors, engineering
017	Professors and instructors, geology and geophysics
018	Professors and instructors, mathematics
019	Professors and instructors, medical sciences
023	Professors and instructors, physics
024	Professors and instructors, psychology
025	Professors and instructors, statistics
026	Professors and instructors, natural sciences
027	Professors and instructors, social sciences
028	Professors and instructors, nonscientific subjects
029	Professors and instructors, subjects not specified
031	Dancers and dancing teachers
032	Dentists
033	Designers
034	Dieticians and nutritionists
035	Draftsmen
036	Editors and reporters
041	Engineers, aeronautical

TABLE C- 2 (continued)

Occupation Code	Occupational Description
042	Engineers, chemical
043	Engineers, civil
044	Engineers, electrical
045	Engineers, industrial
046	Engineers, mechnical
047	Engineers, metallurgical and metallurgists
048	Engineers, mining
049	Engineers, other
051	Entertainers
053	Foresters and conservationists
054	Funeral directors and embalmers
055	Lawyers and judges
056	Librarians
057	Musicians and music teachers
058	Nurses, professional
059	Nurses, student professional
061	Agricultural scientists
062	Biological scientists
063	Geologists and geophysicists
067	Mathematicians
068	Physicists
069	Natural scientists, other
070	Optometrists
072	Personnel and labor relations workers
073	Pharmacists
074	Photographers
075	Physicians and surgeons
076	Radio operators
077	Recreation and group workers
078	Religious workers
079	Social and welfare workers
081	Economists, market analyst
082	Psychologists
083	Statisticians and actuaries
084	Social scientists, other
092	Surveyors
093	Teachers, elementary and secondary
094	Technicians, medical and dental
095	Technicians, testing
096	Technicians, other
097	Therapists and healers
098	Veterinarians
099	Professional, technical and kindred workers, other

TABLE C- 2 (continued)

Occupation Code	Occupational Description
100	Farmers (owners and tenants)
123	Farm managers
	MANAGERS, OFFICIALS, AND PROPRIETORS, EXCEPT FARM
	Salaried Employment Sector
200	Buyers and department heads, store
201	Buyers and shippers, farm products
203	Conductors, railroad
204	Credit men
205	Floormen and floor managers, store
210	Inspectors, public administration
220	Salaried managers, other
221	Retail trade, food and dairy product stores
222	Retail trade, general merchandise and stores
223	Retail trade, apparel and accessories stores
224	Retail trade, furniture and home equipment stores
225	Retail trade, motor vehicles and accessories retailing
228	Retail trade, hardware, farm and building implement retail
229	Retail trade, other
230	Managers and superintendents, building
240	Officiers, pilots, pursers and engineers (ship)
250	Officials and administrators, public administration
259	Self-employed managers, officials and proprietors (non-farm)
260	Officials, lodge, society, union, etc.
270	Postmasters
280	Purchasing agents and buyers
	Self- Employment Sector
259	Self-employed managers, officials, and proprietors (non-farm)
261	Retail trade, food and dairy products stores
262	Retail trade, general merchandise stores
263	Retail trade, apparel and accessories stores
264	Retail trade, furniture and home equipment stores
265	Retail trade, motor vehicles and accessories retailing
266	Retail trade, gasoline service stations
267	Retail trade, eating and drinking places
269	Retail trade, other
281	Construction
282	Manufacturing
283	Transportation
284	Telecommunications and utilities-sanitary services

TABLE C- 2 (continued)

Occupation Codes	Occupational Description
285	Wholesale trade (distributor)
286	Banking and other finance
287	Insurance and real estate
288	Business services (public relations, advertising, sales)
289	Personal services
279	All other industries
291	Construction (salaried sector)
292	Manufactoring (salaried sector)
293	Transportation (salaried sector)
294	Telecommunications (salaried sector)
295	Wholesale trade (salaried sector)
	CLERICAL AND KINDRED WORKERS
300	Agents
310	Bookkeepers
320	Cashiers
342	Shipping and receiving clerks
350	Stenographers, typists, and secretaries
390	Clerical and kindred workers, other
	SALES WORKERS
400	Advertising agents and salesmen
420	Demonstrators
450	Insurance agents and brokers
470	Real estate agents and brokers
480	Stock and bond salesmen
490	Salesmen and sales clerks, other
	CRAFTSMEN, FOREMEN AND KINDRED WORKERS
510	Carpenters
512	Compositors and typesetters
514	Decorators and window dressers
515	Electricians
523	Foremen
533	Inspectors

TABLE C- 2 (continued)

Occupation Codes	Occupational Description
545	Mechanics and repairmen, airplane
554	Mechanics and repairmen, other
565	Paperhangers
595	Members of the armed forces
	OPERATIVES AND KINDRED WORKERS
603	Apprentice electricians
605	Apprentice mechanics, except auto
614	Apprentices, other trades
670	Painters, except construction and maintenance
680	Stationary firemen
685	Welders and flame-cutters
690	Operatives and kindred workers, other
	SERVICE WORKERS, EXCEPT HOUSEHOLD
731	Attendants, professional and personal services
764	Housekeepers and stewards
773	Policemen and detectives
784	Waiters and waitresses
790	Service workers, except households, other
	OTHER CATEGORIES OF LABOR
810	Farm foreman
820	Farm laborers, wage workers
840	Farm service laborers, self-employed
970	Laborers, manufacturing-durable goods

APPENDIX D

ANALYSIS OF THE VARIABLE IMPACT OF COLLEGE ORIGINS UPON OCCUPATIONAL ATTAINMENT IN BUSINESS-MANAGERIAL OCCUPATIONS OF MALE 1961 COLLEGE GRADUATES OF DIFFERING SOCIAL STATUS BACKGROUNDS

The following tables (D-1, D-2 and D-3) provide information on the analysis of the variable impact of college origins upon the occupational attainment among business-managerial occupations of male 1961 college graduates of differing social status backgrounds. In reviewing these tables, the reader should recall that analysis for all males in these occupations indicated that the model employed did very little to account for the variance in occupational movements (i.e. see Table IV-7). As such, it was decided that a thorough discussion of the social status category analysis would not significantly add to the study. Thus, these analyses are presented here.

TABLE D - 1

Means and Standard Deviations in a Model of Social Sponsorship among Business-Managerial Occupations ; 1961 Male College Graduates by Social Status[*]

(standard deviation in parenthesis)

Variable	Social Status Origins Low Status (N=218)	 Middle Status (N=386)	 High Status (N=247)
FED - Father's education	4.14 (1.23)	5.09 (1.43)	6.26 (1.30)
MED - Mother's education	4.50 (1.25)	5.04 (1.20)	5.63 (1.23)
HSTYP - High school type	0.20 (0.41)	0.24 (0.43)	0.31 (0.46)
COLQA - College quality	54.89 (8.45)	54.91 (8.86)	60.54 (8.92)
GPA - Grade point average	5.80 (1.31)	5.80 (1.48)	5.38 (1.53)
XOC61N - Senior occup. expect.	58.28 (10.35)	55.38 (9.37)	57.38 (11.12)
HDEG - Graduate degree	0.20 (0.40)	0.21 (0.41)	0.29 (0.45)
FJOBN - First job status	51.11 (15.76)	52.57 (11.99)	34.43 (----)[a]
POC68N - 1968 occup. prestige	56.34 (8.96)	53.68 (8.87)	54.44 (9.76)

Where: High school type .... 0= public, 1= private

Graduate degree .... 0 = none, 1= any advanced degree

Social status origins ..... Determined by father's socioeconomic status as follows:

low = 0 - 33
middle = 34 - 66
high = 67 - 98

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[a] Standard deviation exceeds mean.

TABLE D- 2

Correlation Coefficients for Variables in a Model of Social Sponsorship to Work Among Business-Managerial Occupations of 1961 Male College Graduates by Social Status Background *

Variables	FED	MED	HSTYP	COIQA	GPA	XOC61N	HDEG	FJOBN	POC68N
				Low Status Origins (N= 218)					
FED - Father's education	1.000	.624	-.067	.214	-.042	-.064	.019	.082	-.076
MED - Mother's education		1.000	-.063	.122	.011	.029	.023	-.033	-.103
HSTYP - High school type			1.000	.322	-.097	-.130	-.030	-.052	-.044
COIQA - College quality				1.000	.158	-.337	.059	.205	-.075
GPA - Grade point average					1.000	-.053	-.098	-.162	-.074
XOC61N - Senior occup. expect.						1.000	.148	.219	.065
HDEG - Graduate degree							1.000	.186	.245
FJOBN - First job status								1.000	.021
POC68N - 1968 occup. prestige									1.000

TABLE D- 2 (continued)

Middle Status Origins (N = 386)

FED - Father's education	1.000	.598	-.013	.217	.175	-.081	.105	.062	.036
MED - Mother's education		1.000	.002	.217	.145	-.009	.162	.017	.111
HSTYP - High school type			1.000	.197	-.028	.071	.159	.050	-.063
COLQA - College quality				1.000	.118	.177	.095	.136	-.107
GPA - Grade point average					1.000	.190	.130	.135	.100
XOC61N - Senior occup. expect.						1.000	-.073	.136	.039
HDEG - Graduate degree							1.000	-.018	.118
FJOBN - First job status								1.000	.374
POC68N - 1968 occup. prestige									1.000

TABLE D- 2 (continued)

High Status Origins (N = 247)

FED - Father's education	1.000	.509	.124	.154	.067	.136	.171	-.090	.136
MED - Mother's education		1.000	.254	.314	.033	.001	.178	-.015	.089
HSTYP - High school type			1.000	.376	.042	-.001	.133	.036	.321
COLQA - College quality				1.000	.177	.006	.228	-.058	.093
GPA - Grade point average					1.000	.078	.139	-.017	.040
XOC61N - Senior occup. expect.						1.000	.143	.005	.152
HDEG - Graduate degree							1.000	.022	.177
FJOBN - First job status								1.000	.084
POC68N - 1968 occup. prestige									1.000

* Social status origins as determined in Table D- 1.

TABLE D- 3

Coefficients in a Model of Social Sponsorship to Work Among Business-Managerial Occupations of 1961 Male College Graduates by Social Status Origins[1]

(standardized coefficients)

Regressor		Dependent Variables					
		College Quality	Grade Point Average	Senior Occup. Expectations	Graduate Degree	1968 Occup. Prestige	
				Low Status Origins (N = 218)			
FED	- Father's education	.242*	-.143	-.046	.009	.002	.006
MED	- Mother's education	-.008	.060	.100	-.006	-.101	-.105
HSTYP	- High school type	.337*	-.180*	-.002	-.039	-.009	-.012
COLQA	- College quality		.240*	-.354*	.120	-.085	-.077
GPA	- Grade point average			.106	.066	.063	.066
XOC61N	- Senior occup. expt.				.181*	-.001	.007
HDEG	- Graduate degree					.246*	.249*
FJOBN	- First job status						-.026
Coefficient of Determination		.159	.062	.131	.042	.082	.083
Constant of equation		53.730	3.649	75.151	-.672	60.785	60.560

TABLE D- 3 (continued)

Middle Status Origins (N = 386)

FED - Father's education	.140*	.124	-.168*	-.021	-.033	-.059
MED - Mother's education	.132	.052	.025	.145*	.134	.155*
HSTYP - High school type	.198*	-.044	.039	.163*	-.055	-.068
COLQA - College quality		.088	.177*	.041	-.149*	-.189*
GPA - Grade point average			.196*	.135*	.075	.033
XOC61N - Senior occup. expect.				-.118	.062	.023
HDEG - Graduate degree					.117	.132*
FJOBN - First job status						.399*
Coefficient of Determination	.098	.041	.085	.077	.057	.209
Constant of equation	48.770	3.897	43.182	.080	50.672	40.632

TABLE D- 3 (continued)

	High Status Origins (N= 247)					
FED - Father's education	-.005	.069	.179*	.081	.088	.097
MED - Mother's education	.236*	-.056	-.091	.073	-.042	-.045
HSTYP - High school type	.316*	-.025	-.001	.039	.327*	.322*
COLQA - College quality		.194*	-.005	.161*	-.060	-.053
GPA - Grade point average			.070	.091	.006	.006
XOC61N - Senior occup. expect.				.124	.123	.122
HDEG - Graduate degree					.121	.118
FJOBN - First job status						.074
Coefficient of determination	.192	.036	.029	.099	.148	.155
Constant of equation	55.294	3.206	50.101	-.945	53.757	52.888

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[1] Social status origins determined as in Table D- 1.

[*] Indicates coefficient whose p >.01 and whose metric coefficient is at least twice as large as its standard error.

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